

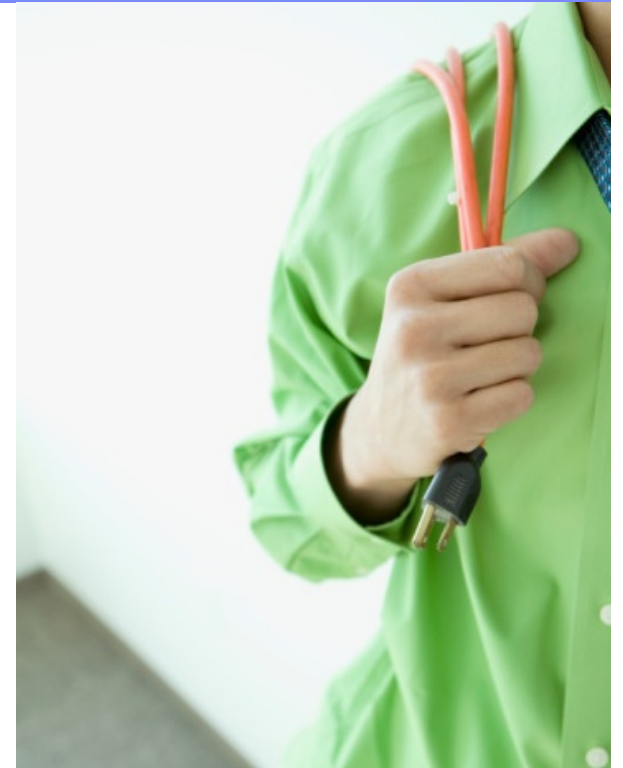


IBM Global Business Services

IBM Institute for Business Value

2007 IBM Energy and Utilities Global Residential/Small Business Consumer Survey Selected Results

IBM Institute for Business Value



2007 IBM Energy and Utilities Global Residential/Small Business Consumer Survey

- *Introduction to the Consumer Survey*
- Energy demand demand and spending
- Reliability and power quality needs
- Buyer values and influences
- Competition and consumer choice
- Prospects for self-generation
- Survey demographics

The survey's objective was to get the opinions of households and small businesses in North America, Europe, and Asia-Pac for the 2007 E&U POV

Energy demand and spending

- Expected changes in consumption
- Expected changes in overall energy costs

Reliability and power quality needs

- Dependency on reliable power
- Attitudes toward power quality

Buyer values and influences

- Buyer values for non-energy purchases
- Relative importance of cost, convenience, quality and environmental considerations
- Energy usage patterns
- Importance of corporate social responsibility and ethics

Competition and consumer choice

- Knowledge of and availability of alternative providers
- Interest in supplier choice and alternative products
- Consumer information security

Prospects for self-generation

Introduction to the Consumer Survey

The twenty-one question survey was targeted for three geographic regions

Sample respondents

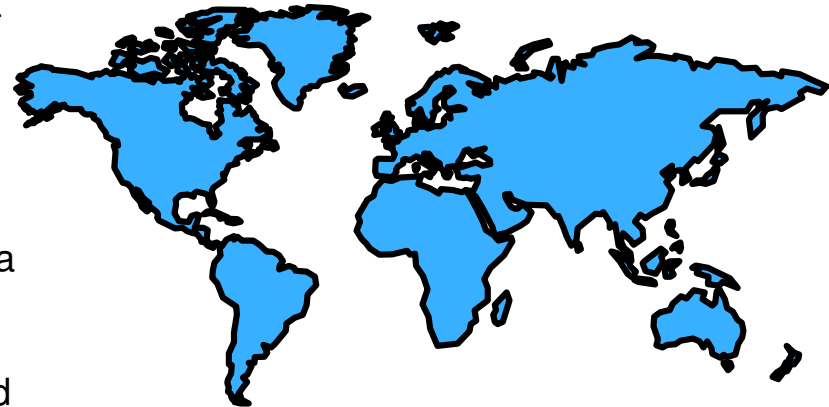
1,894 responses from bill-paying households over 18 years of age in six countries – one in North America (United States), three in Europe (Germany, Netherlands, England), and two in Asia-Pac (Japan, Australia)

Questionnaire structure

21 multi-part questions in four languages covering a wide variety of topics including attitudes towards energy and environment, corporate social responsibility and ethics, interest in renewables and other self-generation, and energy costs

The survey was conducted during June-July, 2007.

Note: For the purposes of these results, the terms *consumer* and *customer* refer to this set of residential and small business energy users.



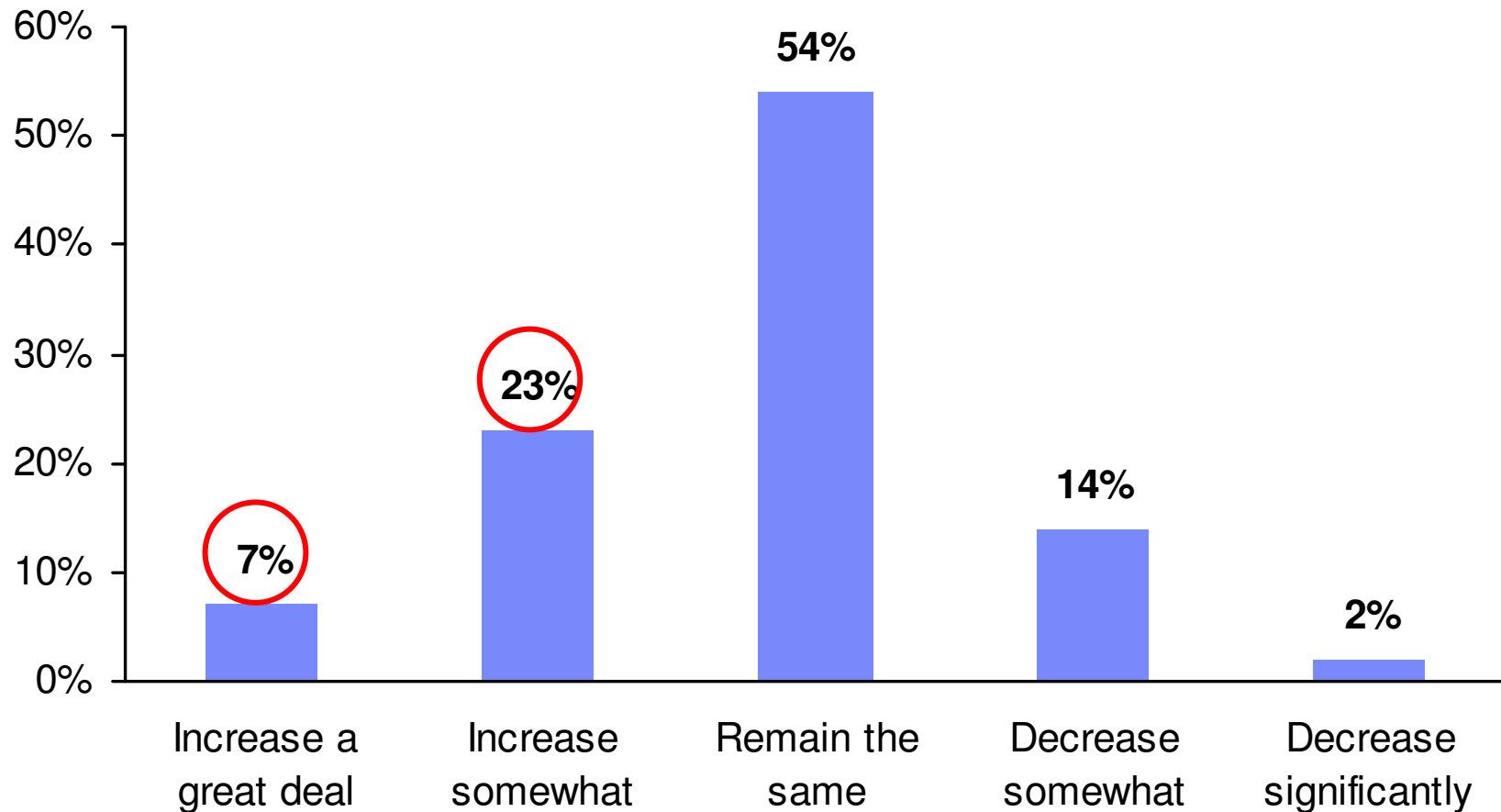
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Energy demand and spending

Close to one-third of consumers expect their energy use to increase over the next 5 years...

How do you expect your energy usage to change over the next five years?

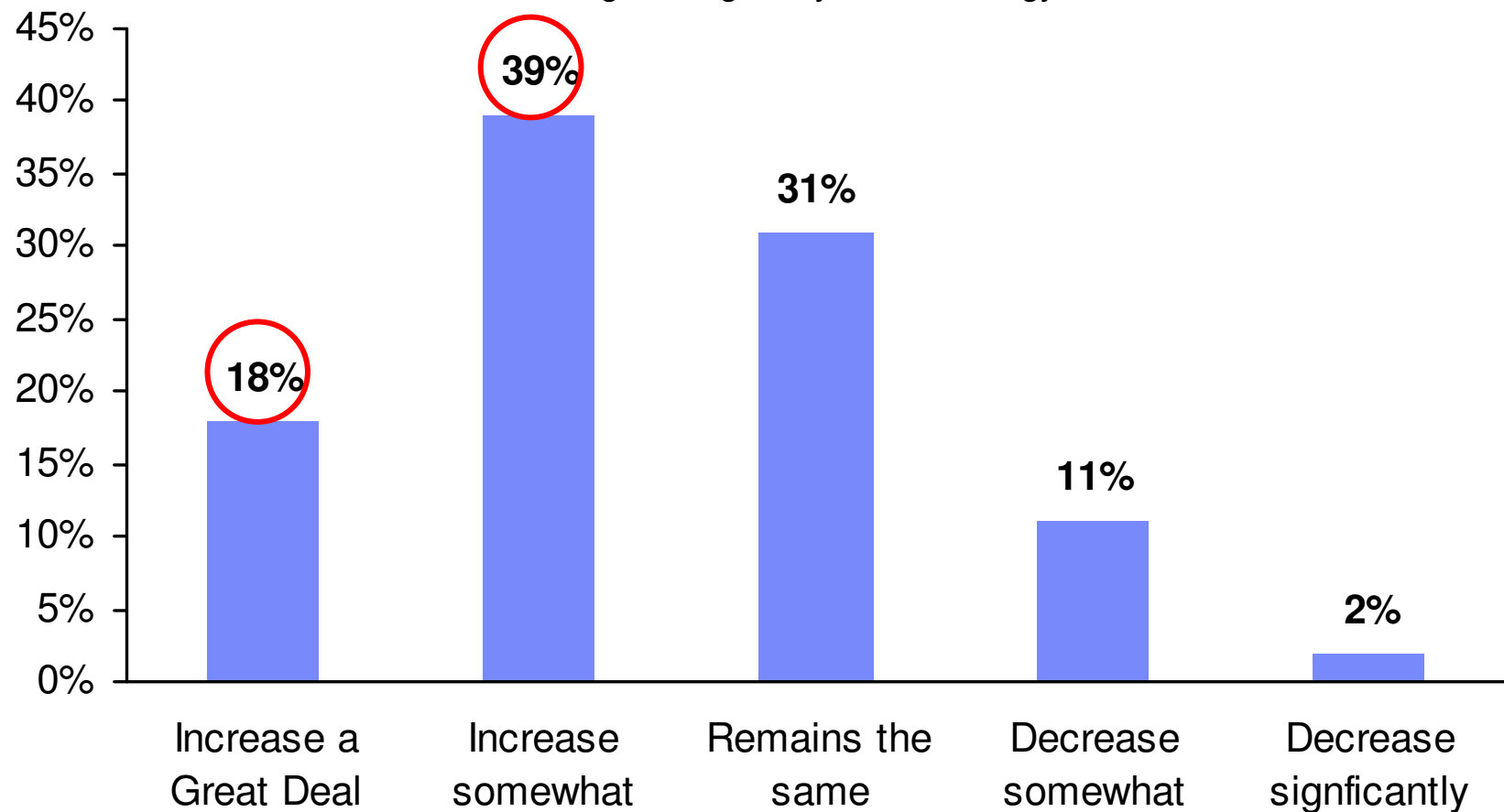


Source: 2007 IBM Institute for Business Value Residential/Small Commercial Consumer Survey; electric customers (n = 1,894).

Energy demand and spending

... but almost 60% expect their energy bills to increase as a result of changes in their usage of power over the next five years

What will be the impact of changes to your electric power and / or natural gas usage on you total energy bill?



Source: 2007 IBM Institute for Business Value Residential/Small Commercial Consumer Survey.

2007 IBM Energy and Utilities Global Residential/Small Business Consumer Survey

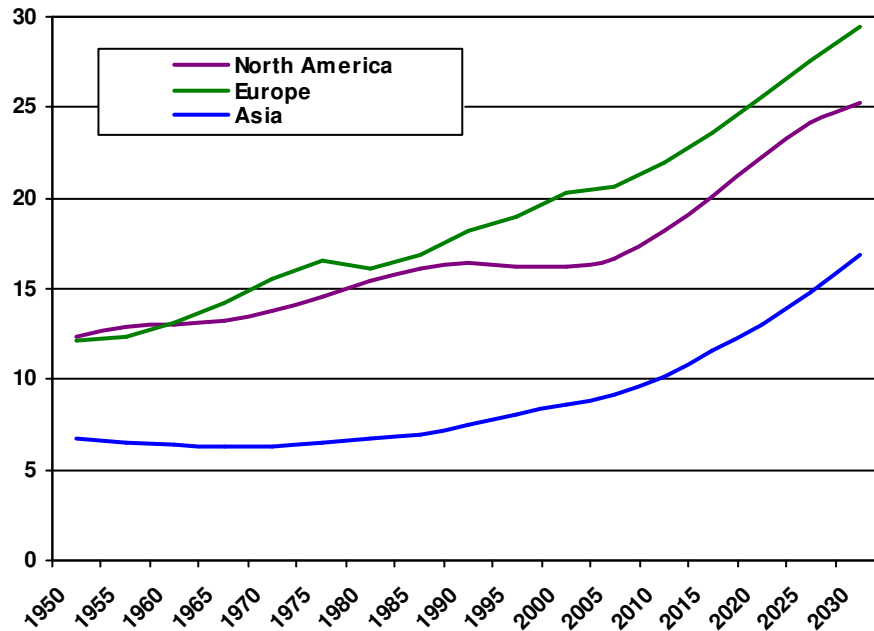
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Reliability and power quality needs

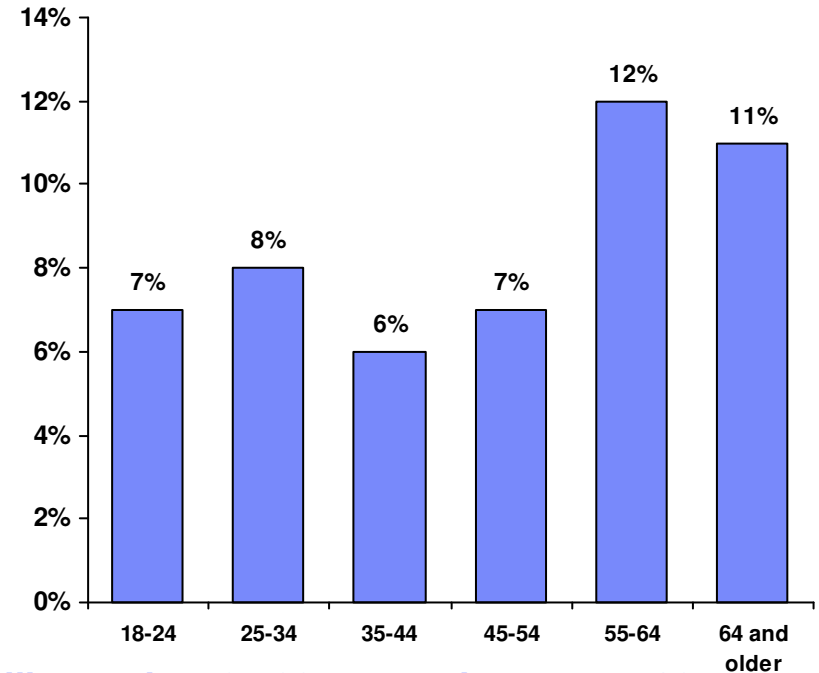
The growing need for reliable power for health needs in an aging populace will increasingly drive demand for uninterrupted power and quality

Do you have health-critical electric-powered devices in your home that are required for regular usage by someone in that home?

Percentage of Population Aged 60+



Total Utility Consumers with Health-Critical Electric Powered Devices By Age



In mature economies, senior populations will grow by 50-100% over the next 15-20 years, and their reliance on electrically-powered health equipment will expose utilities to unprecedented risks if power outages are not virtually eliminated

Source: 2007 IBM Institute for Business Value Residential/Small Commercial Consumer Survey.

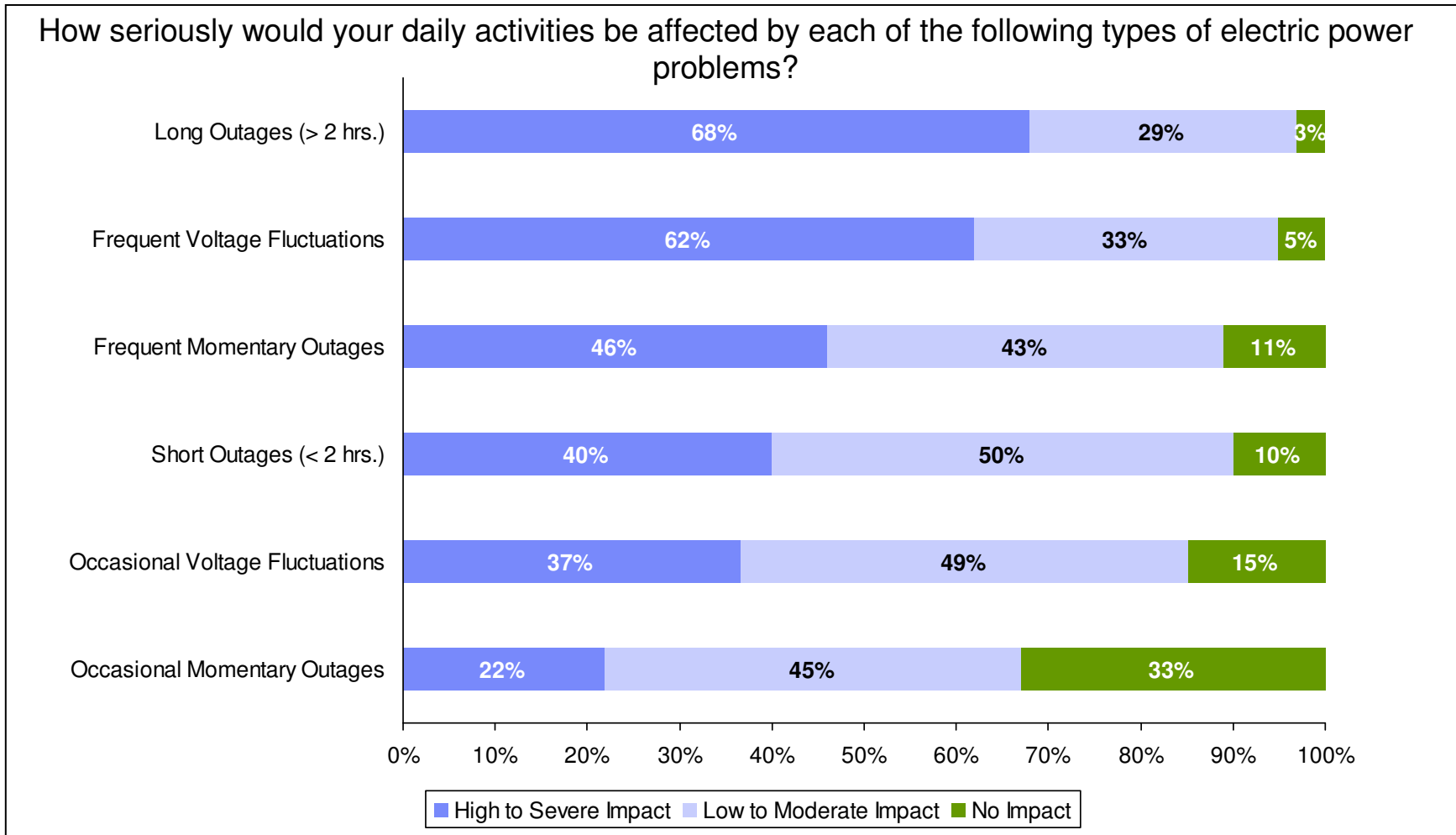
Source: UN Department of Economic and Social Affairs, World Population Prospects Population Database: The 2006 Revision

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Reliability and power quality needs

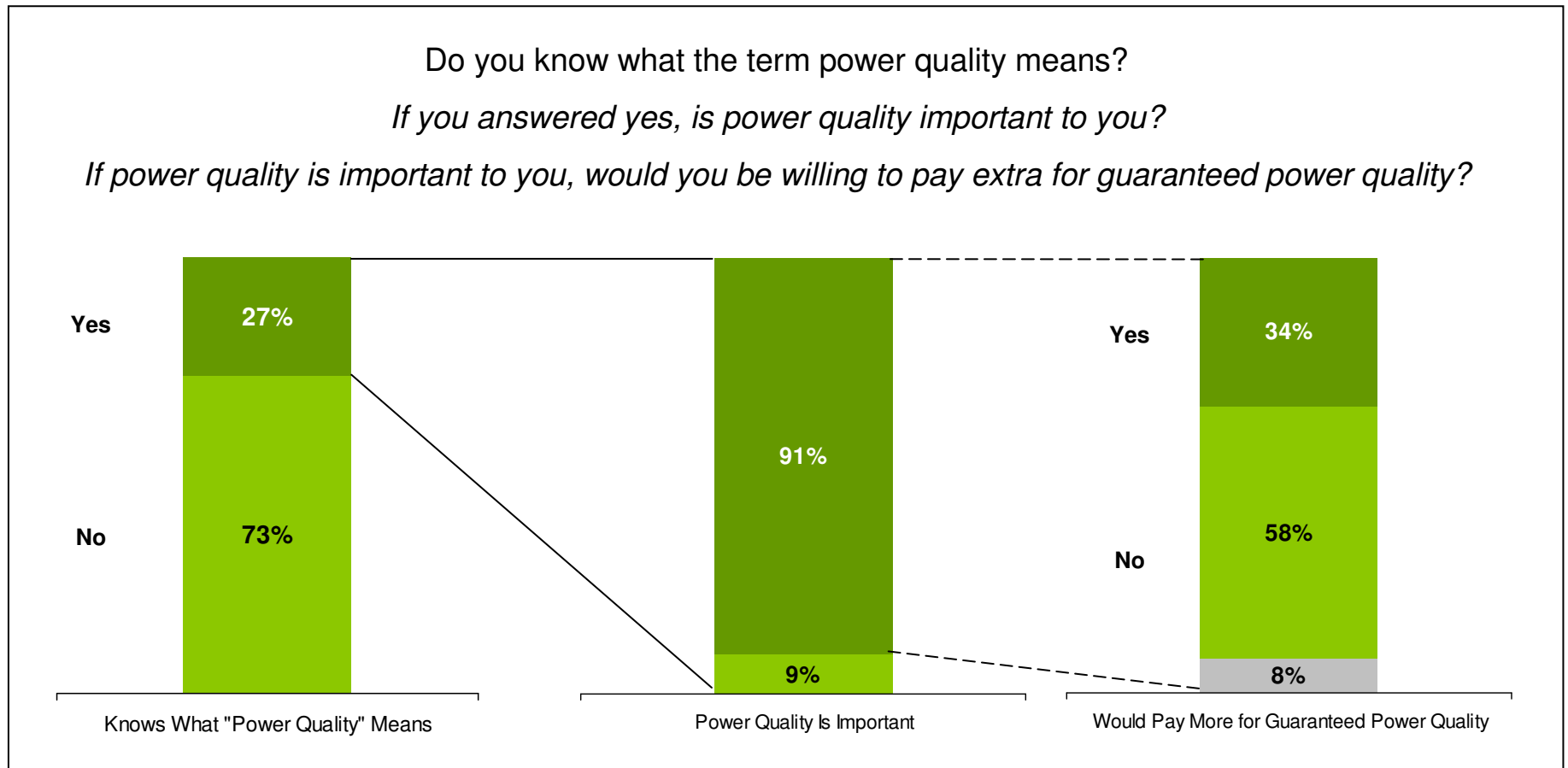
Long outages and frequent voltage fluctuations are the most disruptive to consumers' day-to-day activities



Source: 2007 IBM Institute for Business Value Residential/Small Commercial Consumer Survey.

Reliability and power quality needs

To those who know what power quality means, over 90% believe it is important and 30% would pay a premium for it



Source: 2007 IBM Institute for Business Value Residential/Small Commercial Consumer Survey.

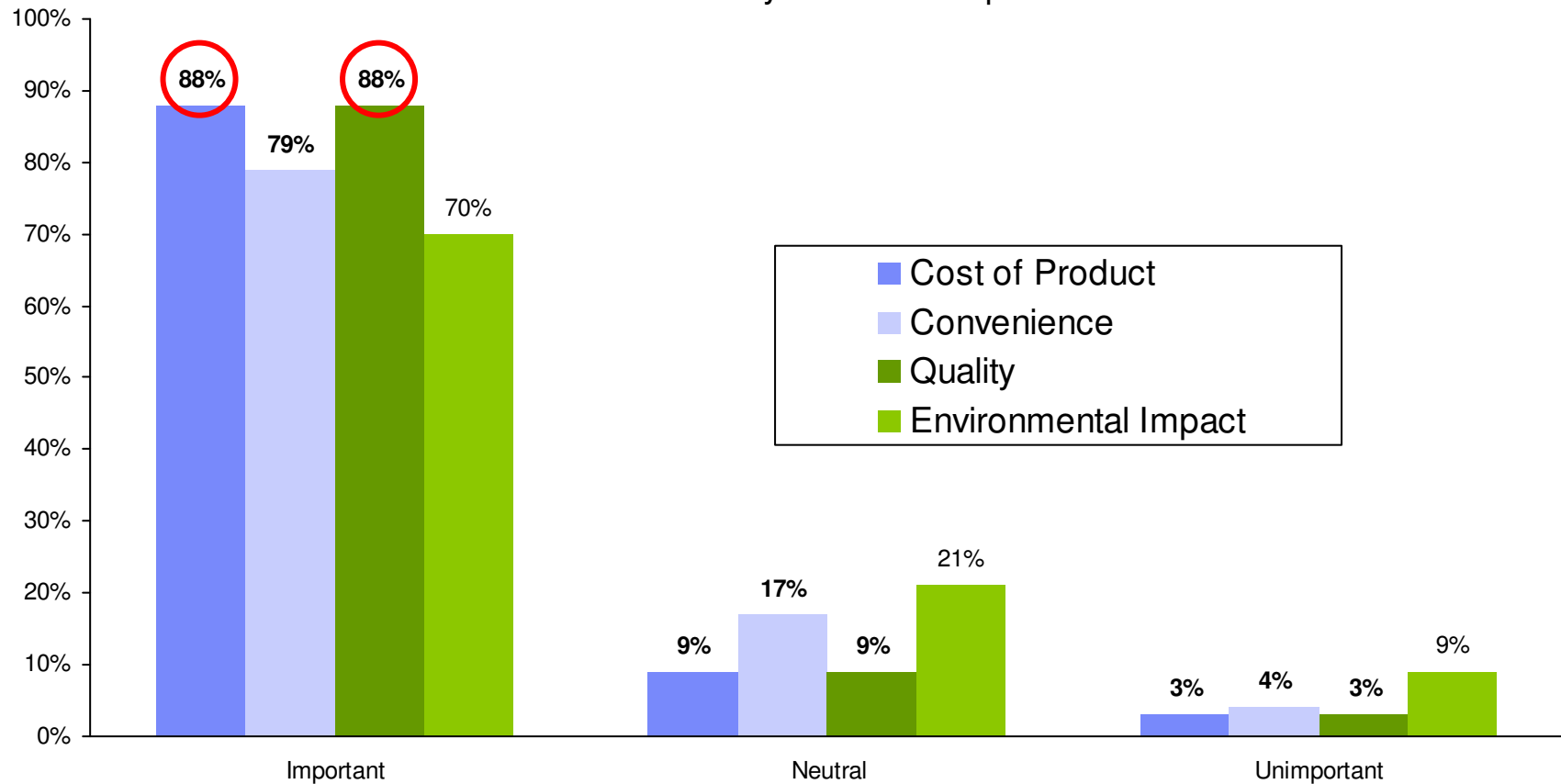
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Buyer values and influences

While the environment is important, cost and quality are still more important considerations for consumers in their choice of products

How important are cost, convenience, quality and environmental considerations in your choice of products?

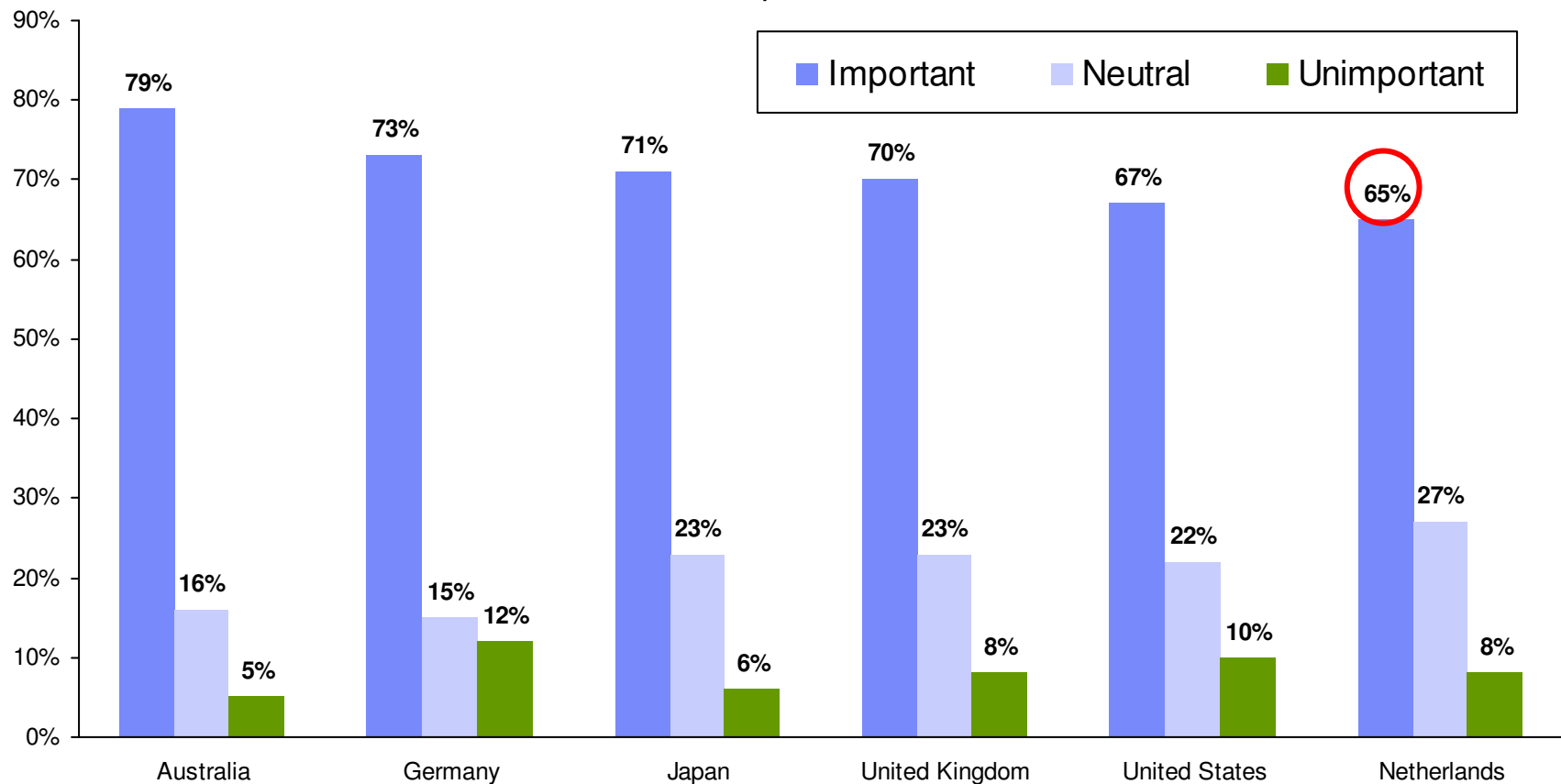


Source: 2007 IBM Institute for Business Value Residential/Small Commercial Consumer Survey.

Buyer values and influences

Consumers in the Netherlands put the least emphasis on the environment least in their choice of products and services

Q2R: How important are environmental considerations in your choice of products?

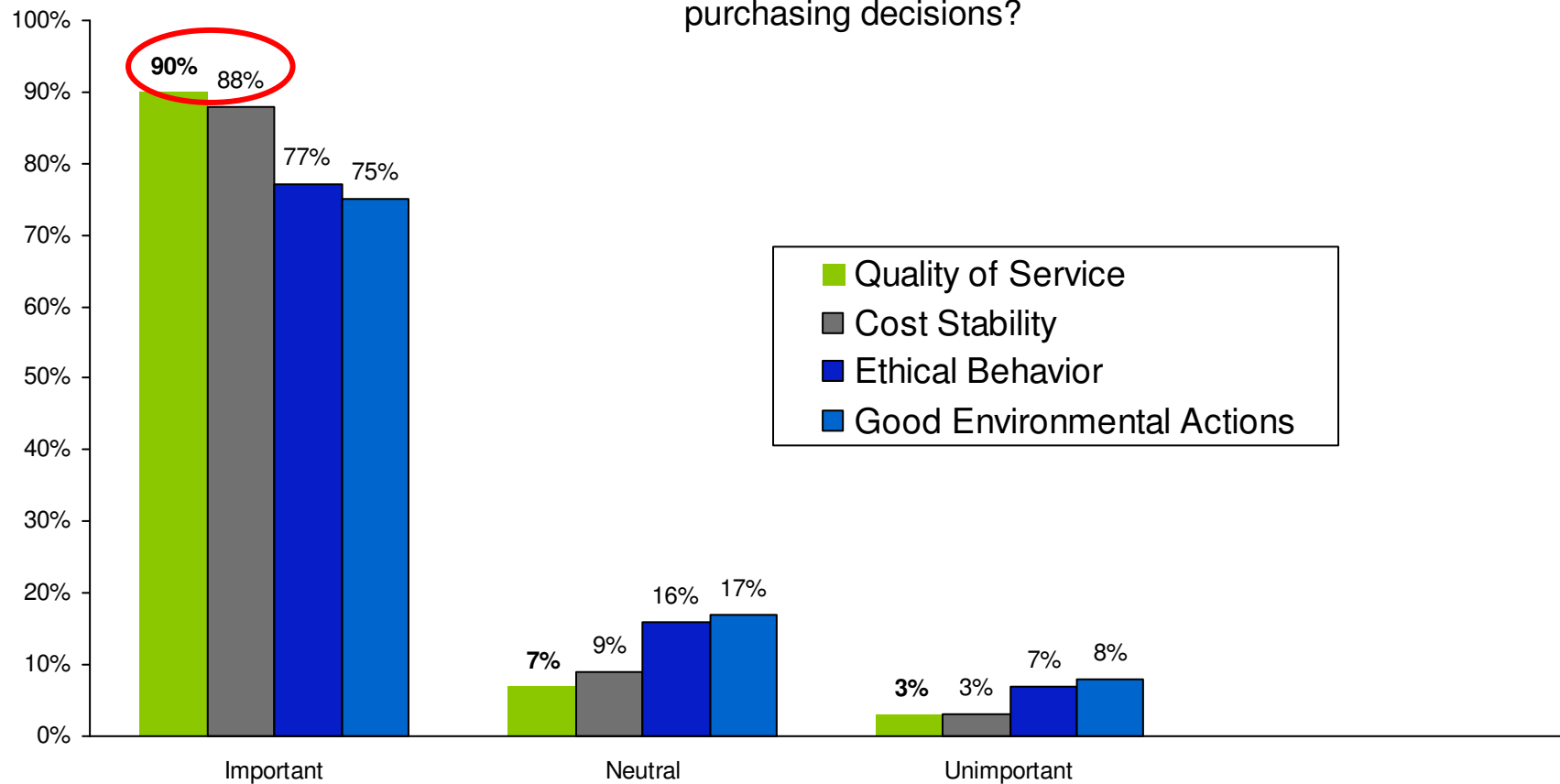


Source: 2007 IBM Institute for Business Value Residential/Small Commercial Consumer Survey.

Buyer values and influences

Supplier reputation for cost stability and quality of service are the most important considerations in consumers purchasing decisions

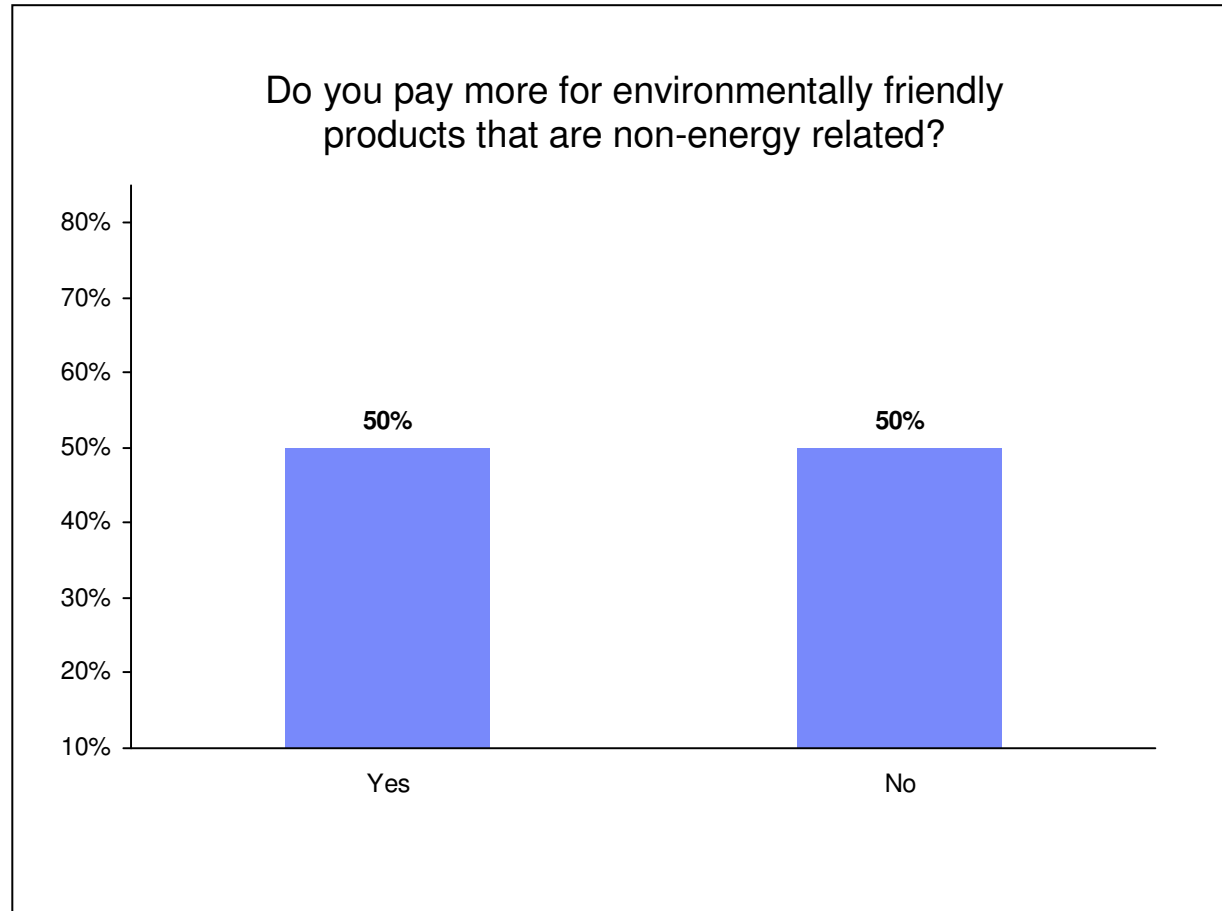
How important is a reputation for ethical business behavior, cost stability, good environmental actions, or quality of service in your purchasing decisions?



Source: 2007 IBM Institute for Business Value Residential/Small Commercial Consumer Survey.

Buyer values and influences

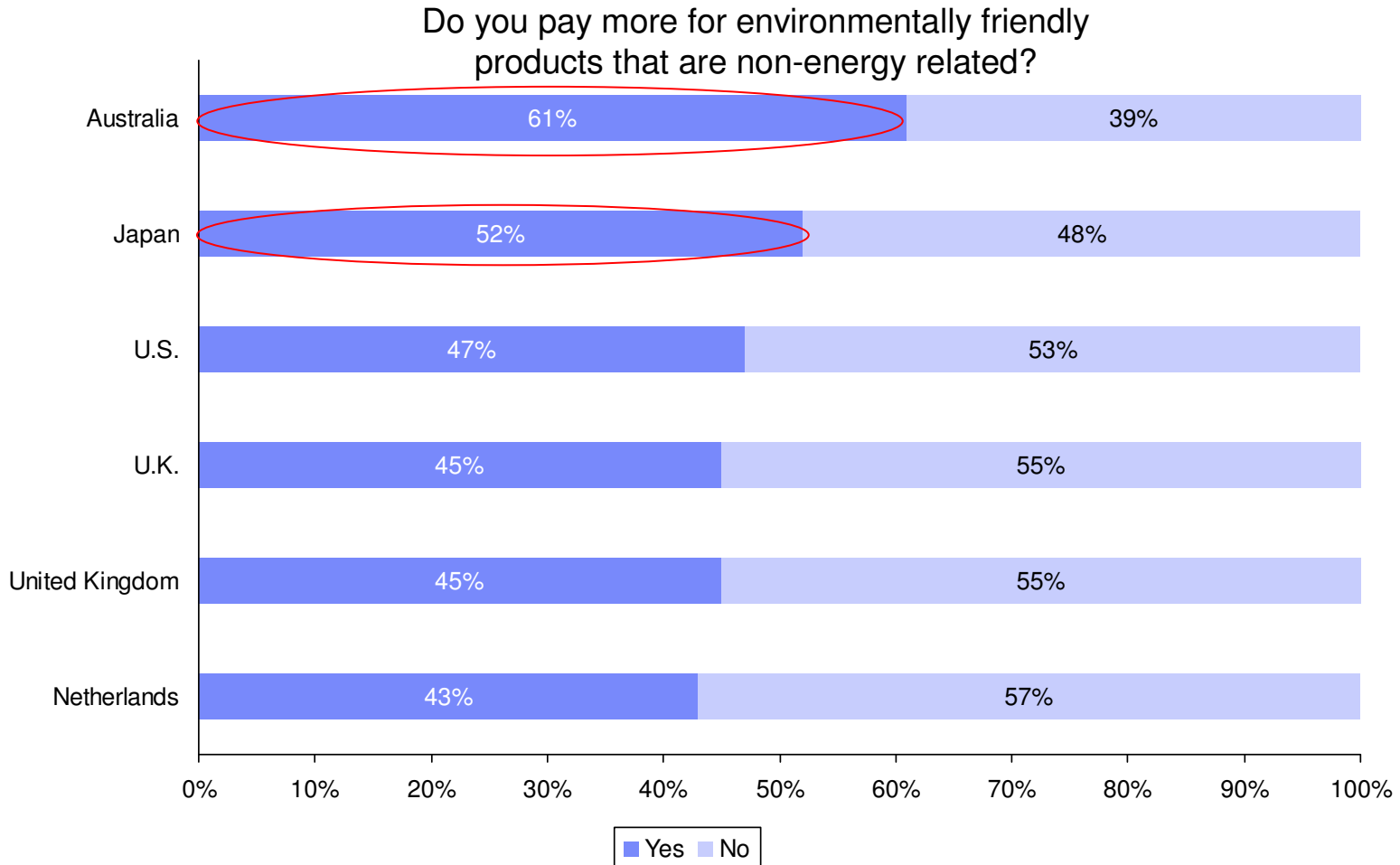
Nearly half of consumers pay more for environmentally friendly non-energy products



Source: 2007 IBM Institute for Business Value Residential/Small Commercial Consumer Survey.

Buyer values and influences

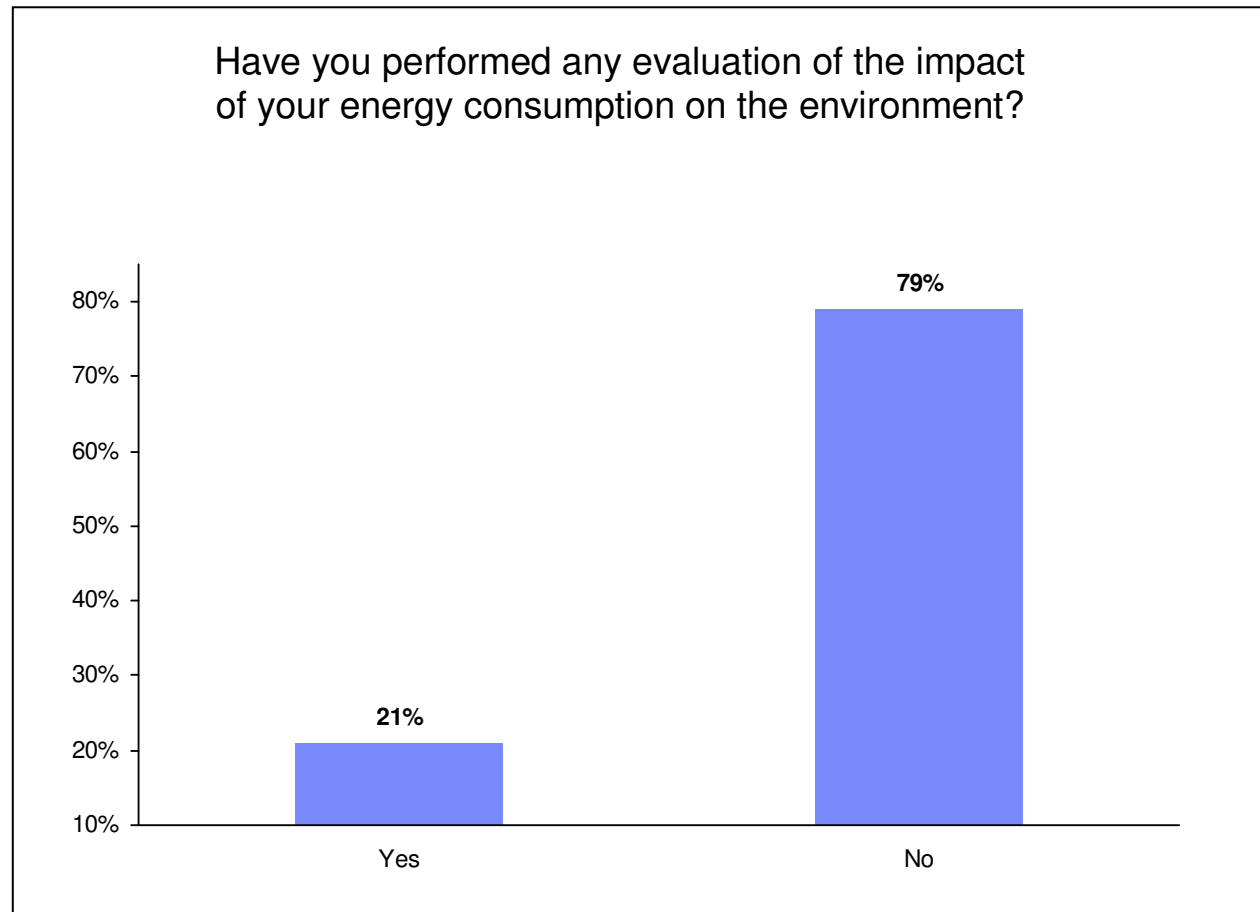
Responses were similar across North America and Europe, but Asia-Pacific respondents did exhibit somewhat higher tendency to “buy green”



Source: 2007 IBM Institute for Business Value Residential/Small Commercial Consumer Survey.

Buyer values and influences

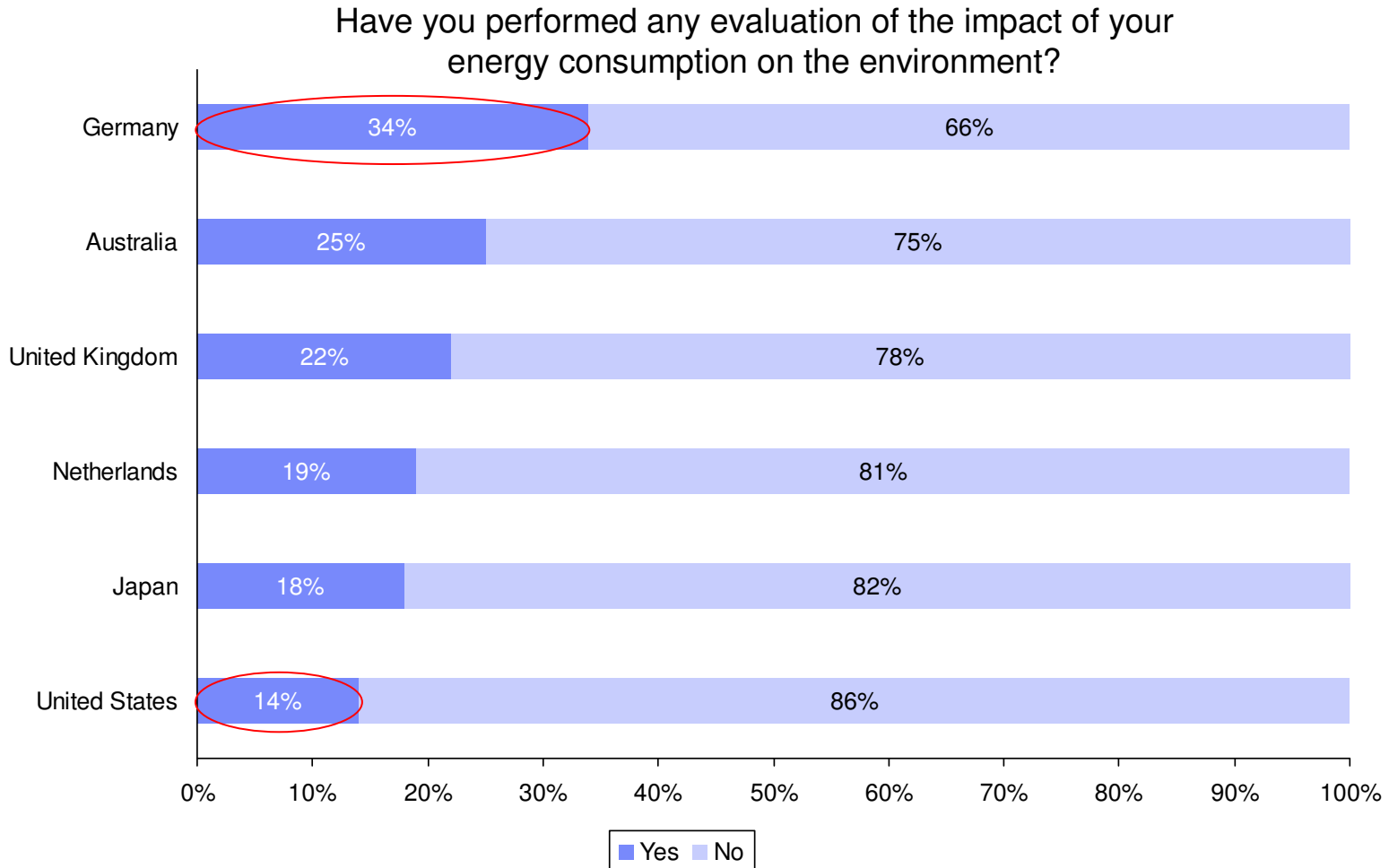
While “carbon footprints” and other analyses of personal environmental impact have attracted media attention, almost 80% have not performed one



Source: 2007 IBM Institute for Business Value Residential/Small Commercial Consumer Survey.

Buyer values and influences

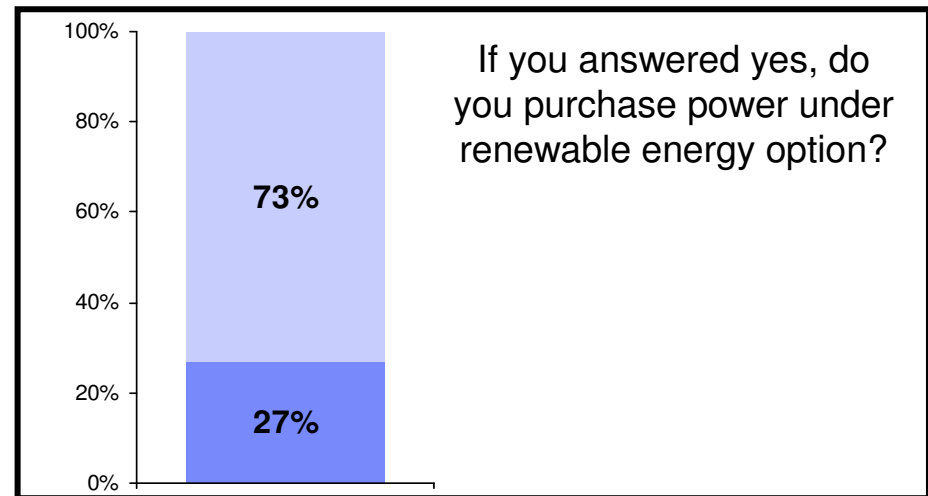
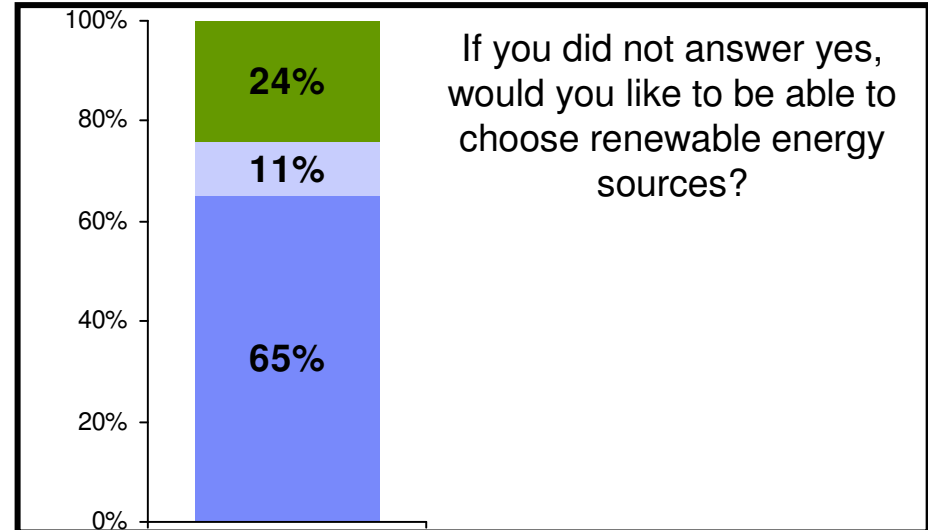
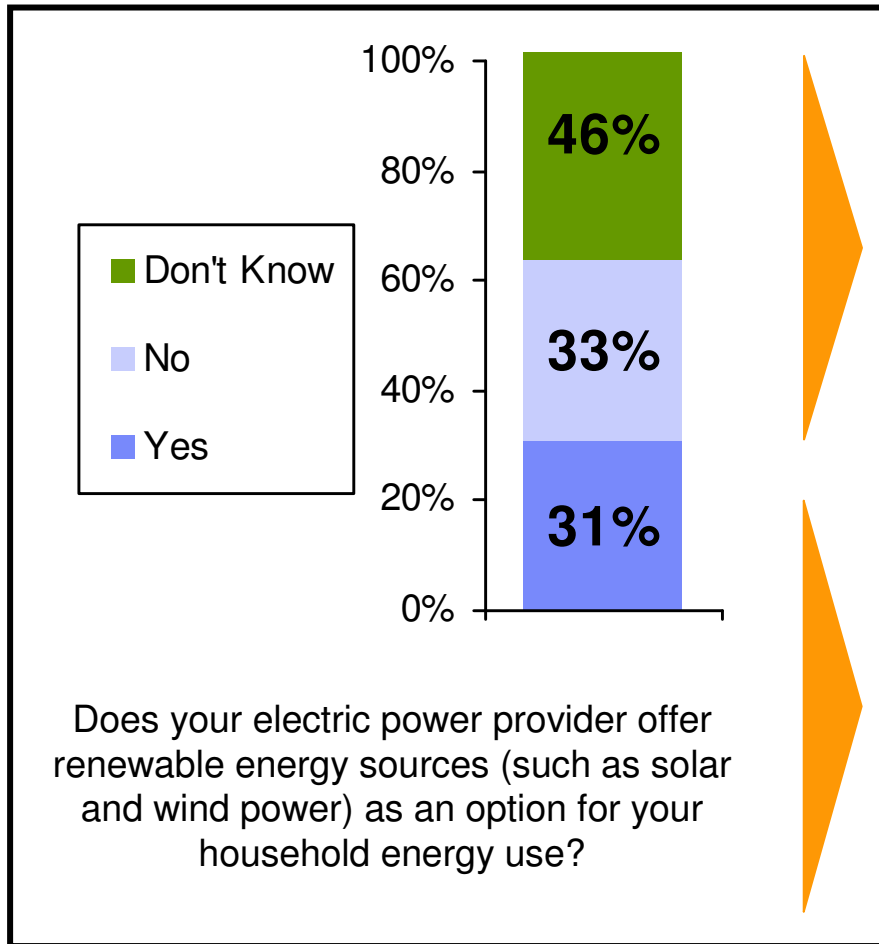
One in three Germans reported having evaluated their personal environmental impact, but only one in seven Americans



Source: 2007 IBM Institute for Business Value Residential/Small Commercial Consumer Survey.

Buyer values and influences

Over one-quarter of consumers who have renewable power options available to them purchase them, but most of those who do not have them say they would like the option to do so

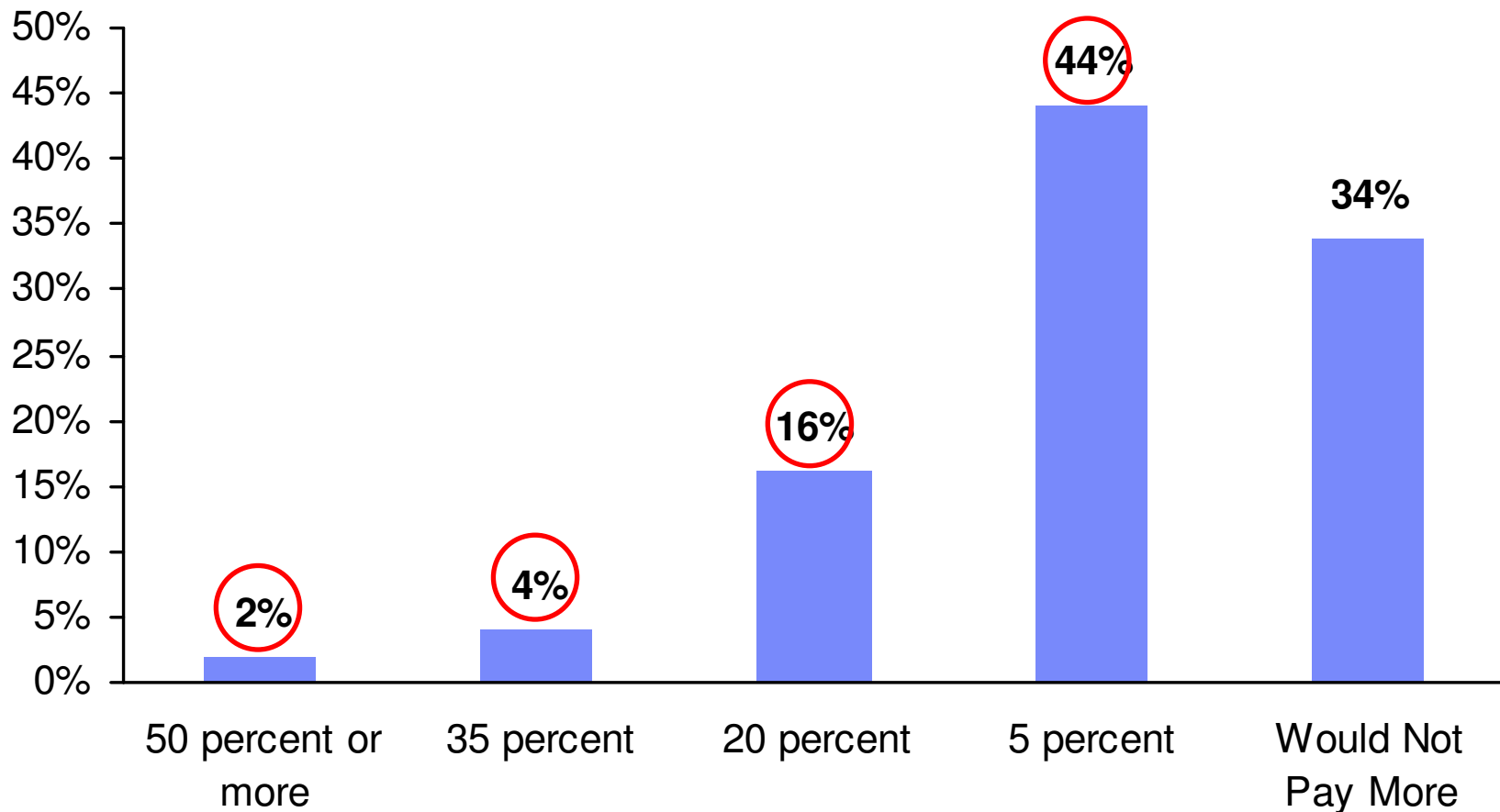


Source: 2007 IBM Institute for Business Value Residential/Small Commercial Consumer Survey.

Buyer values and influences

Over 65% of consumers will pay more for lower greenhouse gas emissions, though most would only accept a very small increase

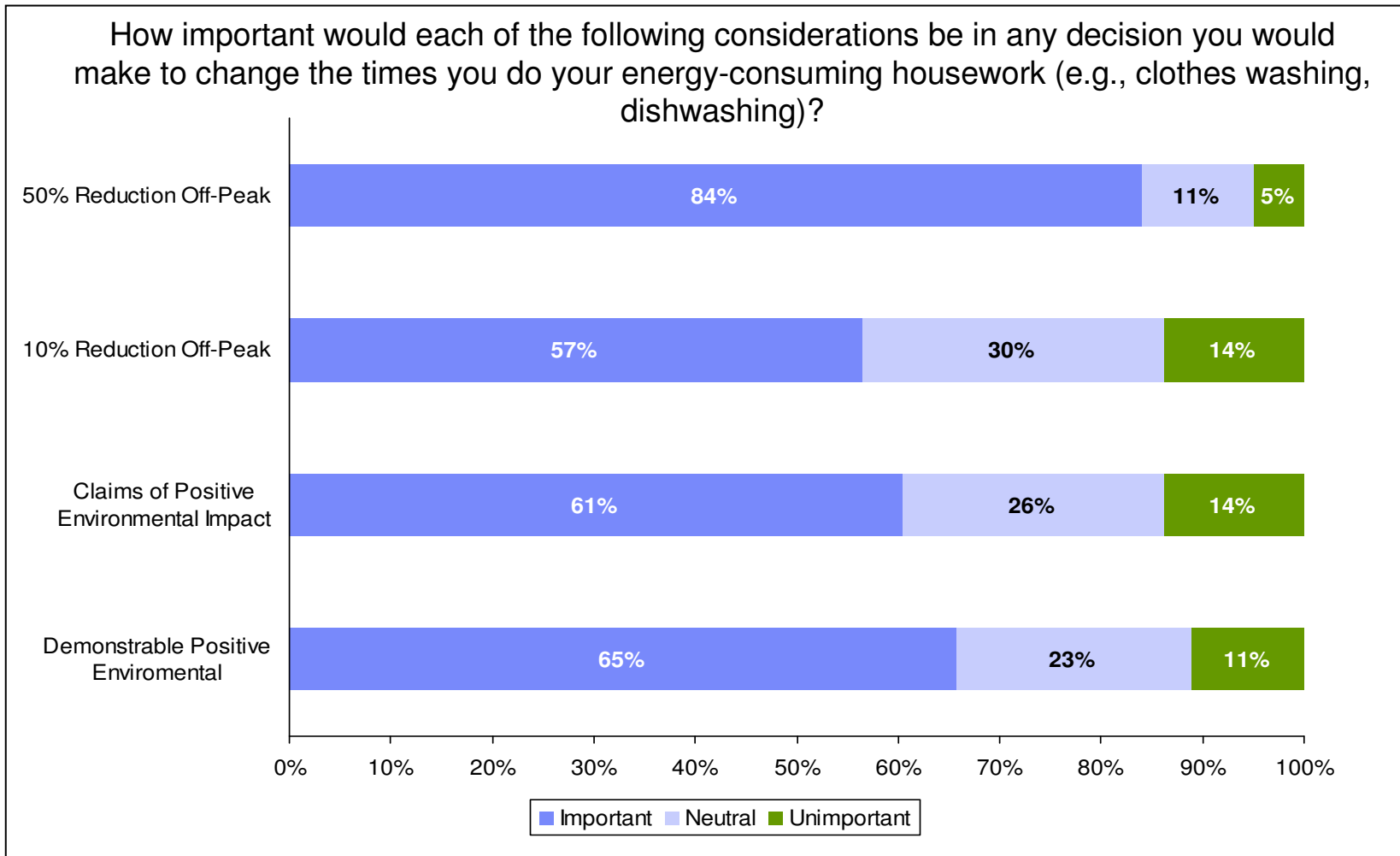
What is the maximum increase in your monthly electric bill you would accept for power that could be definitively shown to have lower emissions of greenhouse gases (and no other unrelated benefits)?



Source: 2007 IBM Institute for Business Value Residential/Small Commercial Consumer Survey.

Buyer values and influences

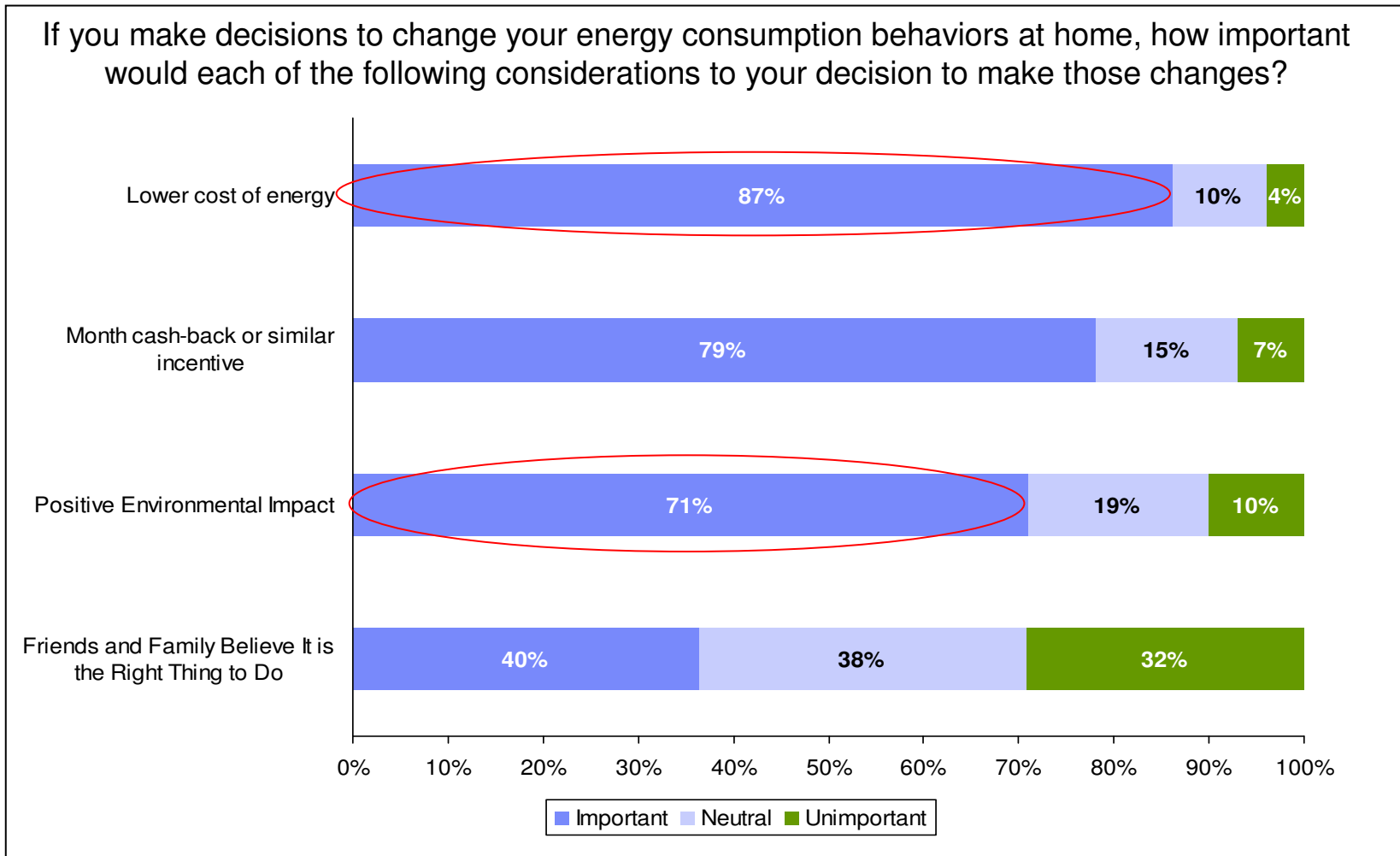
The cost of electricity has a greater impact on when consumers perform their energy-consuming activities than environmental considerations



Source: 2007 IBM Institute for Business Value Residential/Small Commercial Consumer Survey.

Buyer values and influences

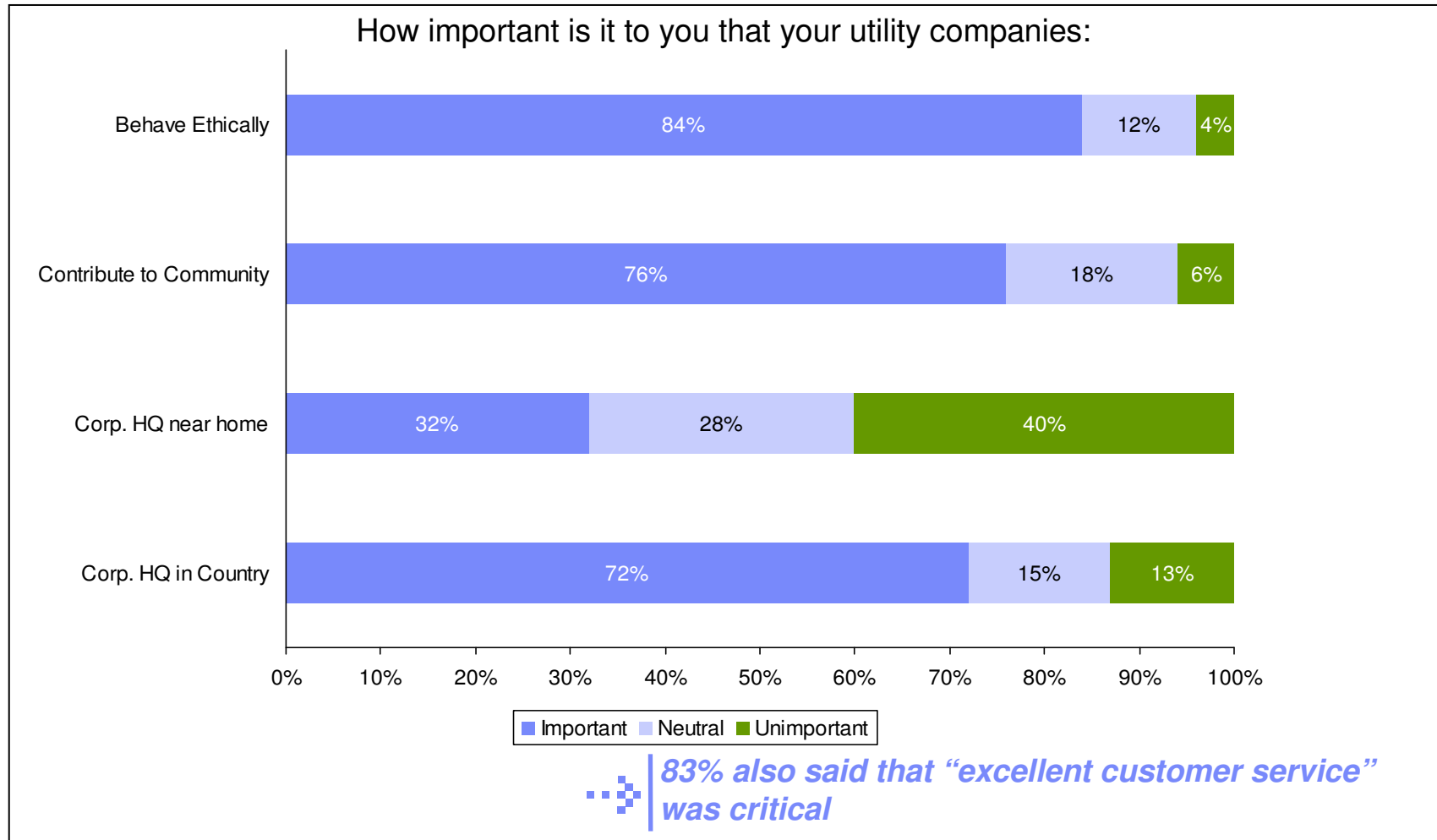
The cost of electricity has a greater impact on when consumers perform their energy-consuming activities than environmental and peer influence



Source: 2007 IBM Institute for Business Value Residential/Small Commercial Consumer Survey.

Buyer values and influences

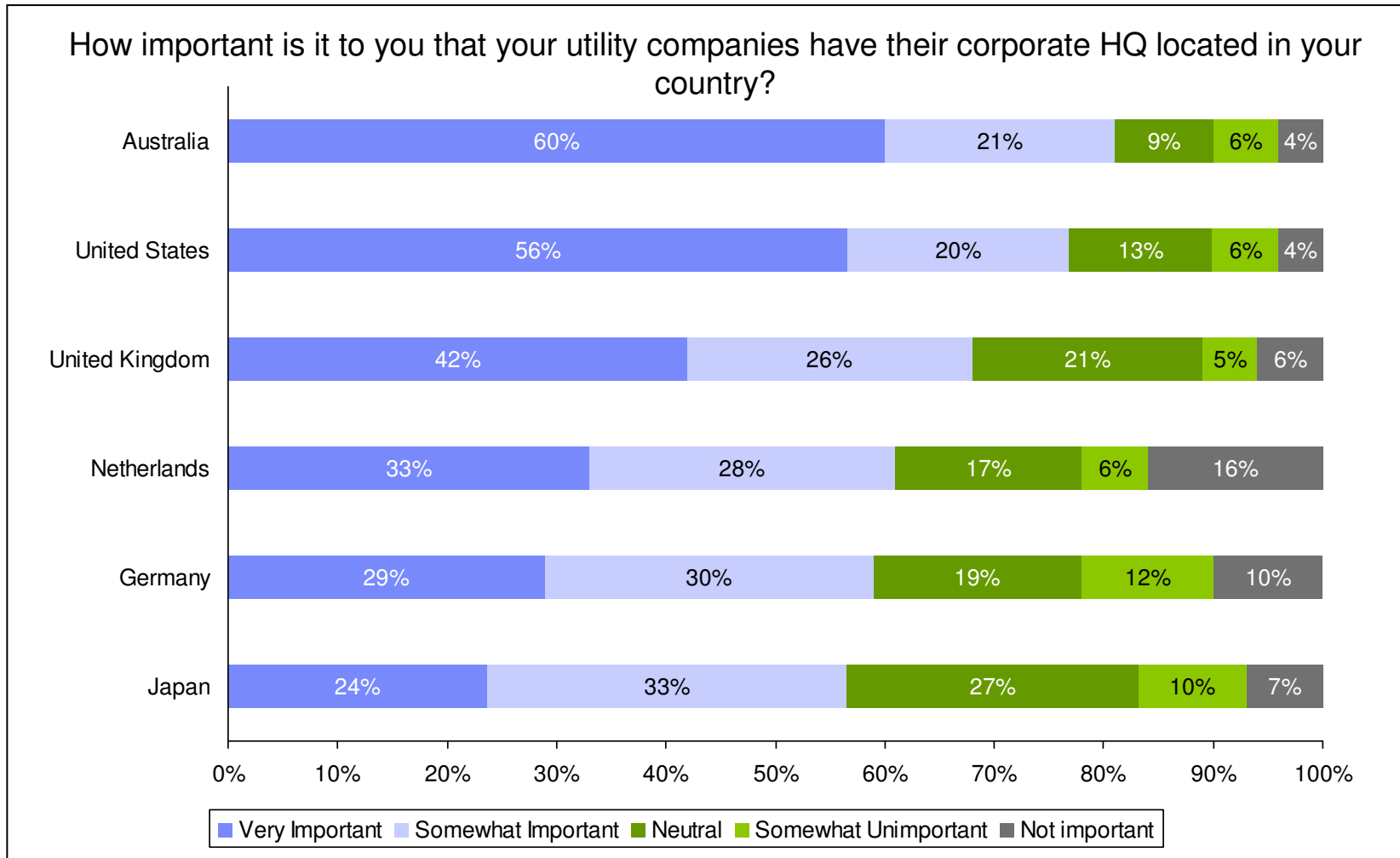
Most customers believe strongly that their utilities should be good corporate citizens, but their geographic location is not critical



Source: 2007 IBM Institute for Business Value Residential/Small Commercial Consumer Survey.

Buyer values and influences

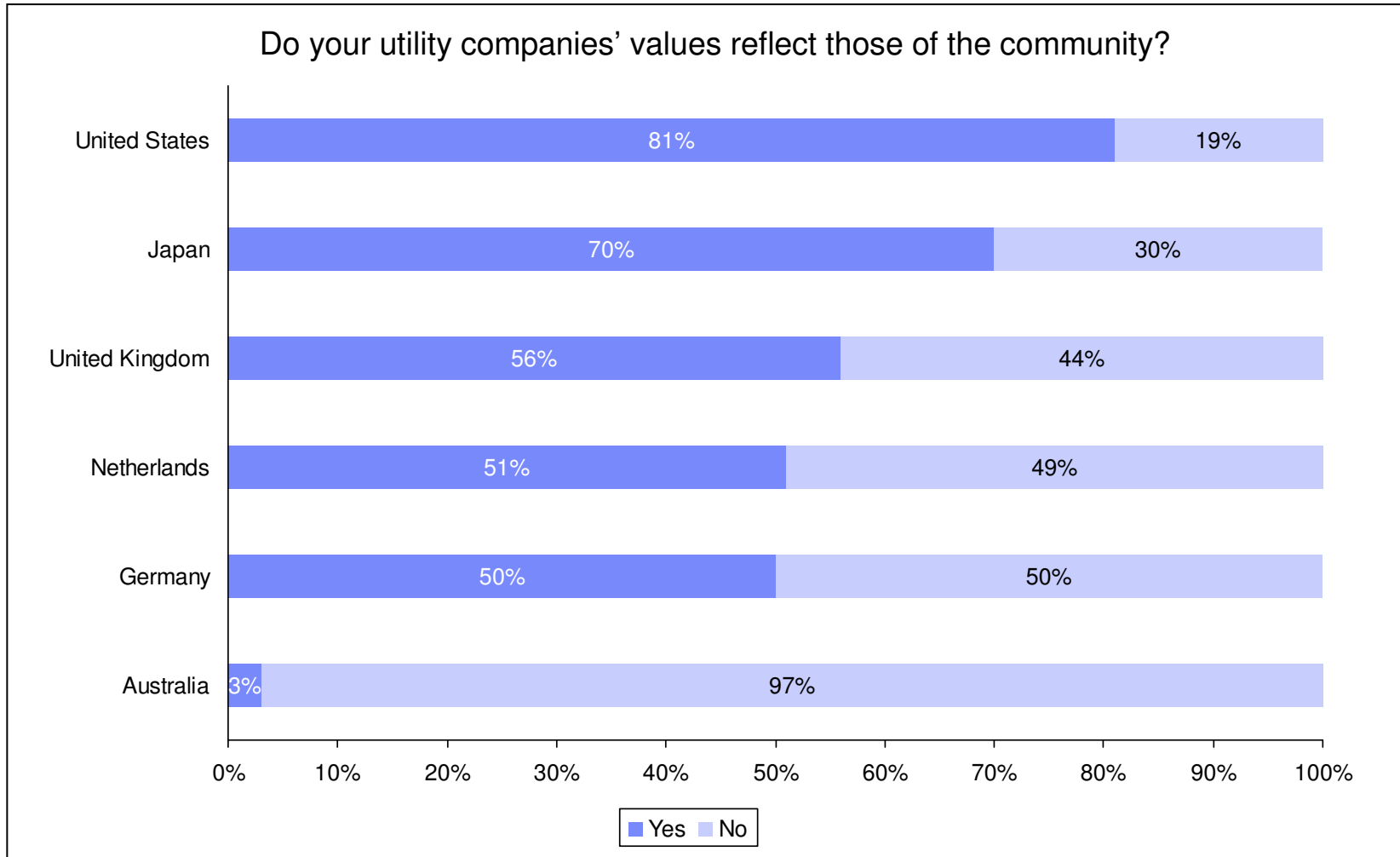
Respondents in Australia, and the United States felt strongly that corporate leaders should be domestically located



Source: 2007 IBM Institute for Business Value Residential/Small Commercial Consumer Survey.

Buyer values and influences

Feelings that utility corporate values matched those of the community varied widely across countries



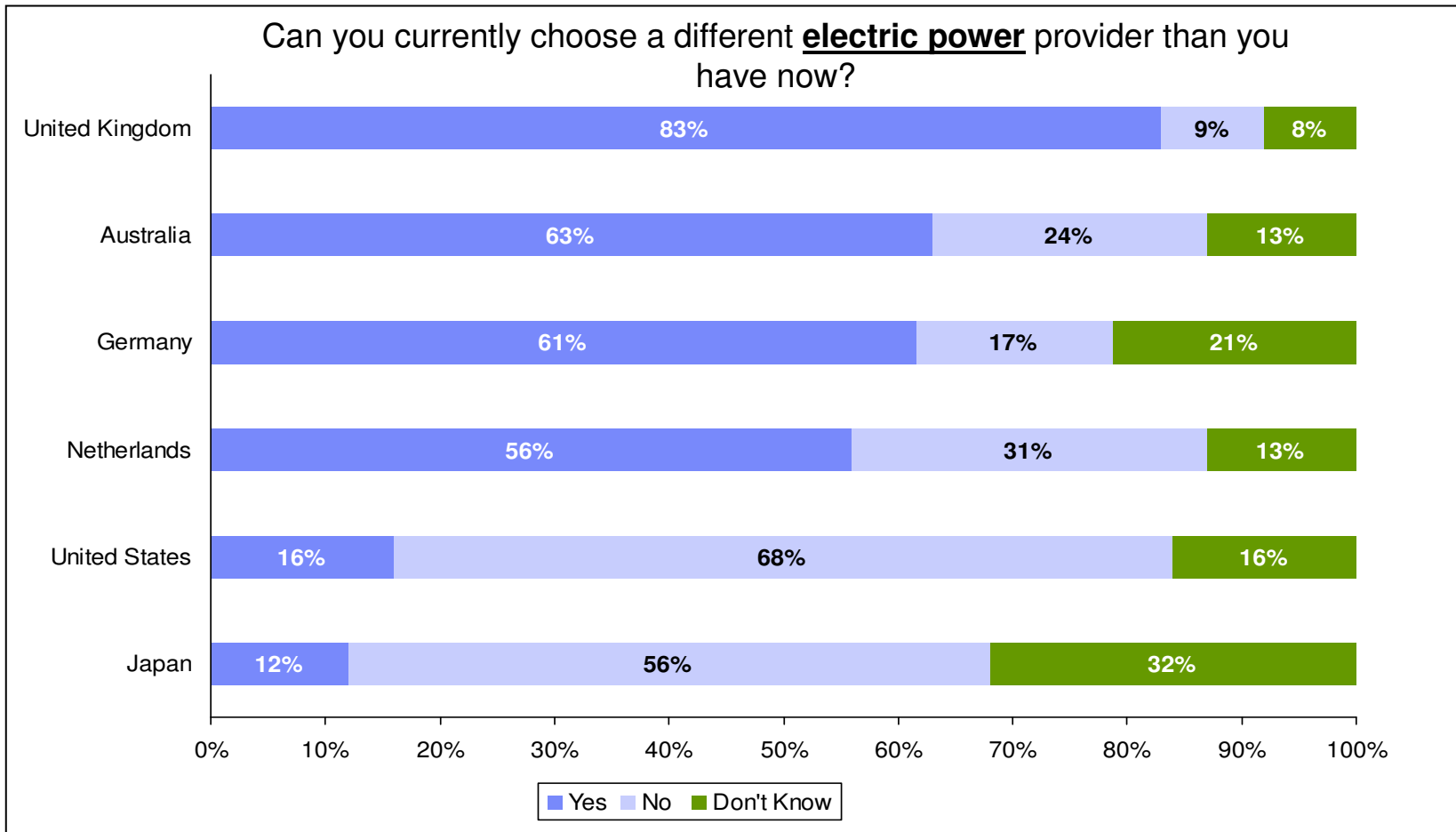
Source: 2007 IBM Institute for Business Value Residential/Small Commercial Consumer Survey.

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- ***Competition and consumer choice***
- Prospects for self-generation
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Competition and consumer choice

Consumers in the United Kingdom have the greatest choice among electric providers while those in US and Japan are the most limited

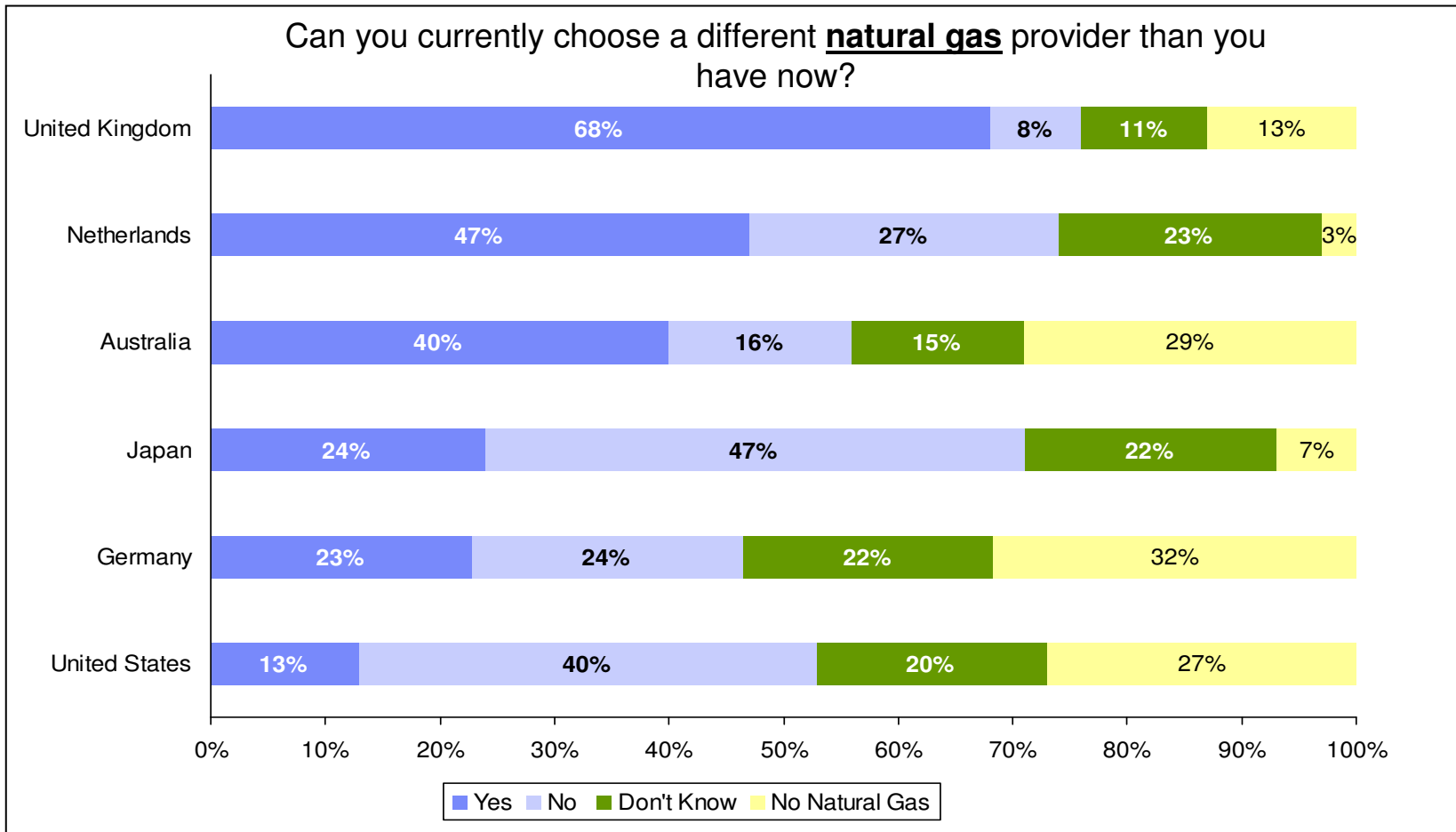


The United Kingdom appears to have the most competitive industry structure while Japan and the U.S. are the least competitive

Source: 2007 IBM Institute for Business Value Residential/Small Commercial Consumer Survey.

Competition and consumer choice

Consumers in the United Kingdom have the greatest choice among natural gas providers but those in US have the most limited choice of suppliers

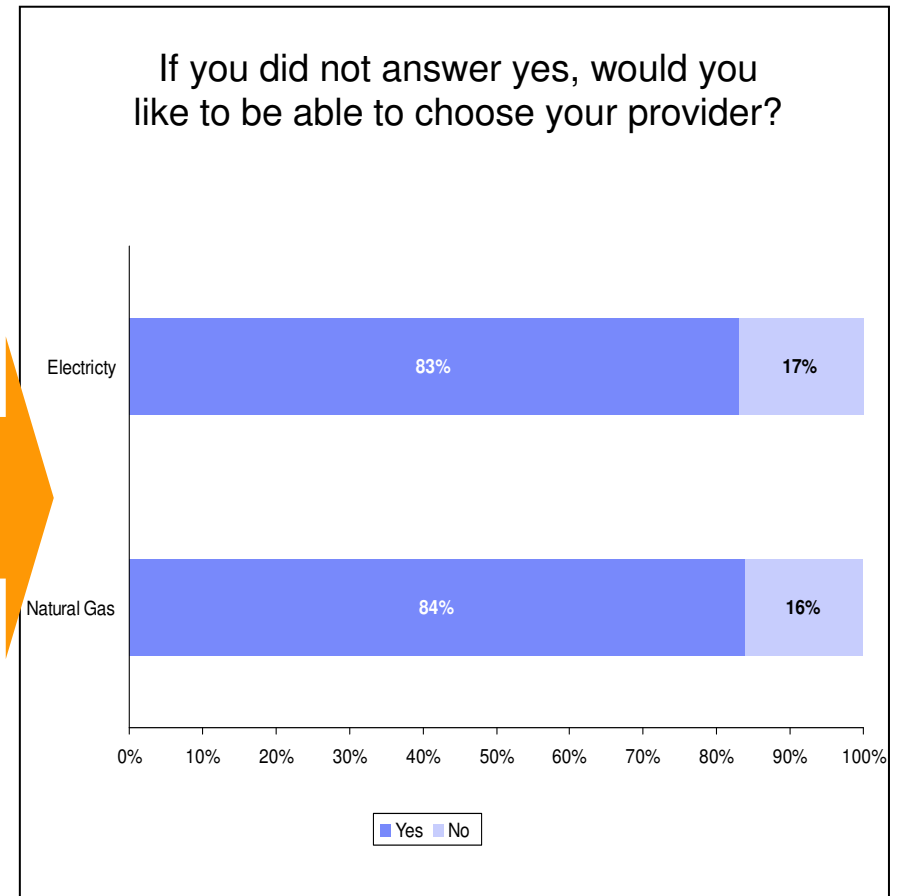
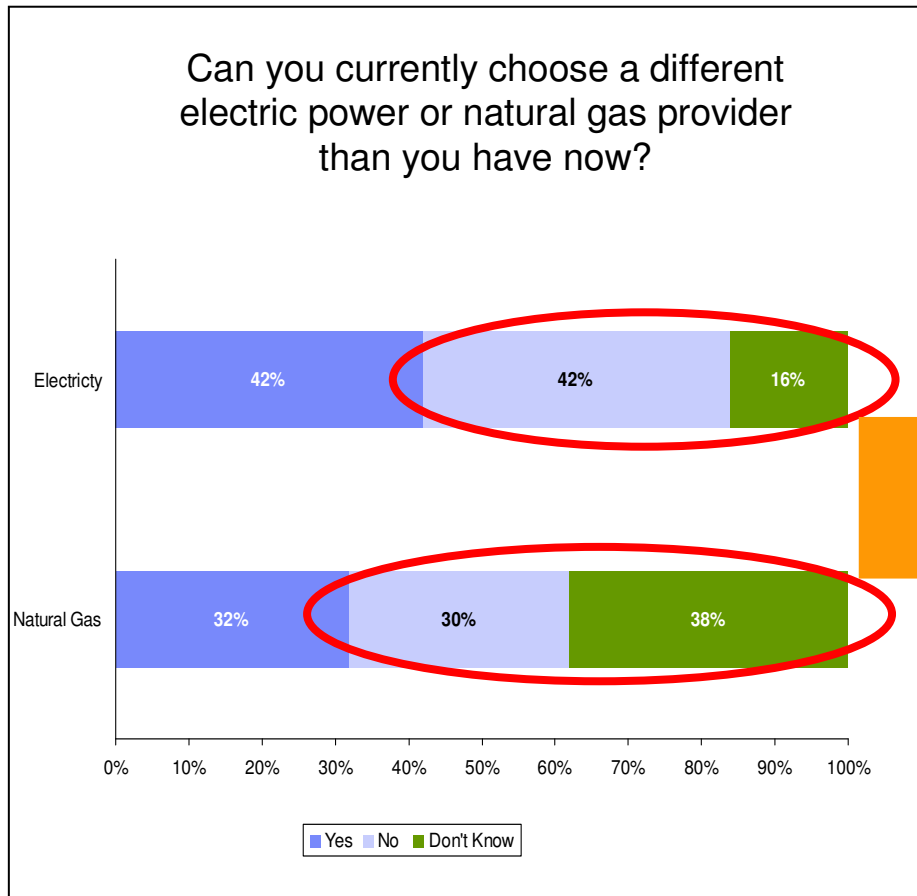


The United Kingdom appears to have the most competitive and 'market' Natural Gas Utility industry and the U.S. is the least competitive

Source: 2007 IBM Institute for Business Value Residential/Small Commercial Consumer Survey.

Competition and consumer choice

Most consumers want the option to choose their electric or gas utility provider, but majority either cannot or do not know they can



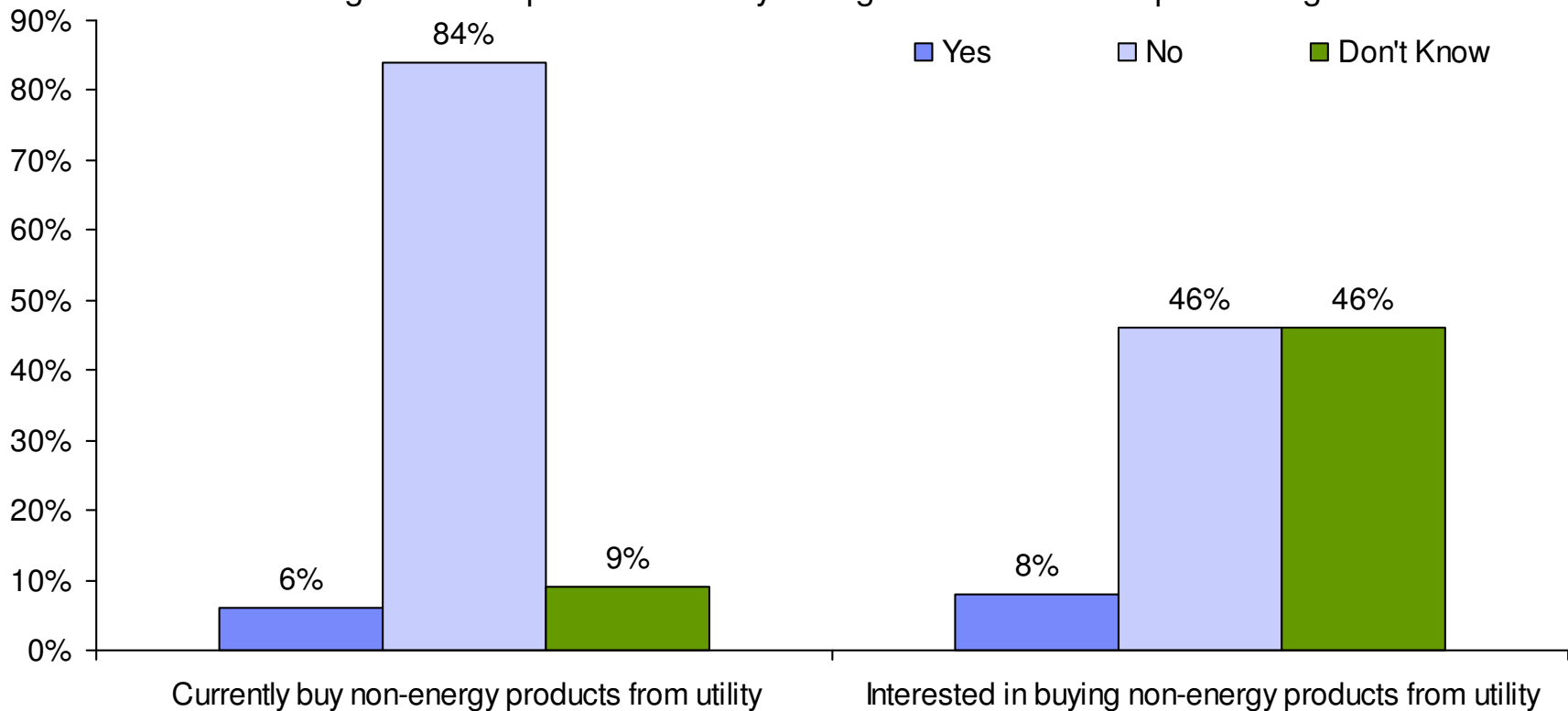
Source: 2007 IBM Institute for Business Value Residential/Small Commercial Consumer Survey.

Competition and consumer choice

Utility respondents generally feel uninterested in buying other products/ services from utilities but more than half may be open to the “right offering”

Do you use any products or services provided by your electric power or natural gas service provider other than the energy they provide?

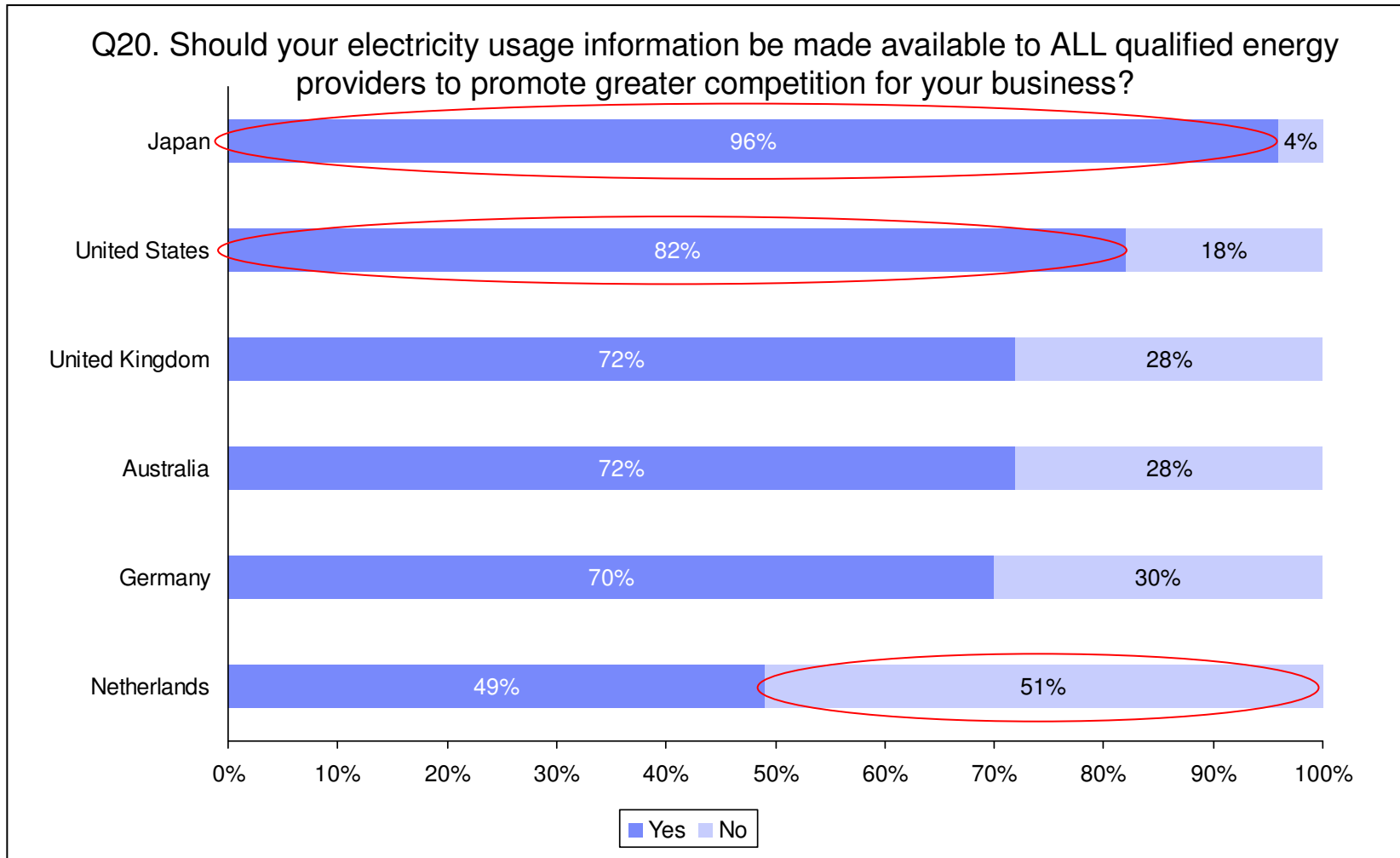
Are there other products or services that you could imagine could be provided by your electric power or natural gas service provider which you might be interested in purchasing?



Source: 2007 IBM Institute for Business Value Residential/Small Commercial Consumer Survey.

Competition and consumer choice

Except in the Netherlands, a strong majority of consumers want their electricity usage information made available to promote competition



Source: 2007 IBM Institute for Business Value Residential/Small Commercial Consumer Survey.

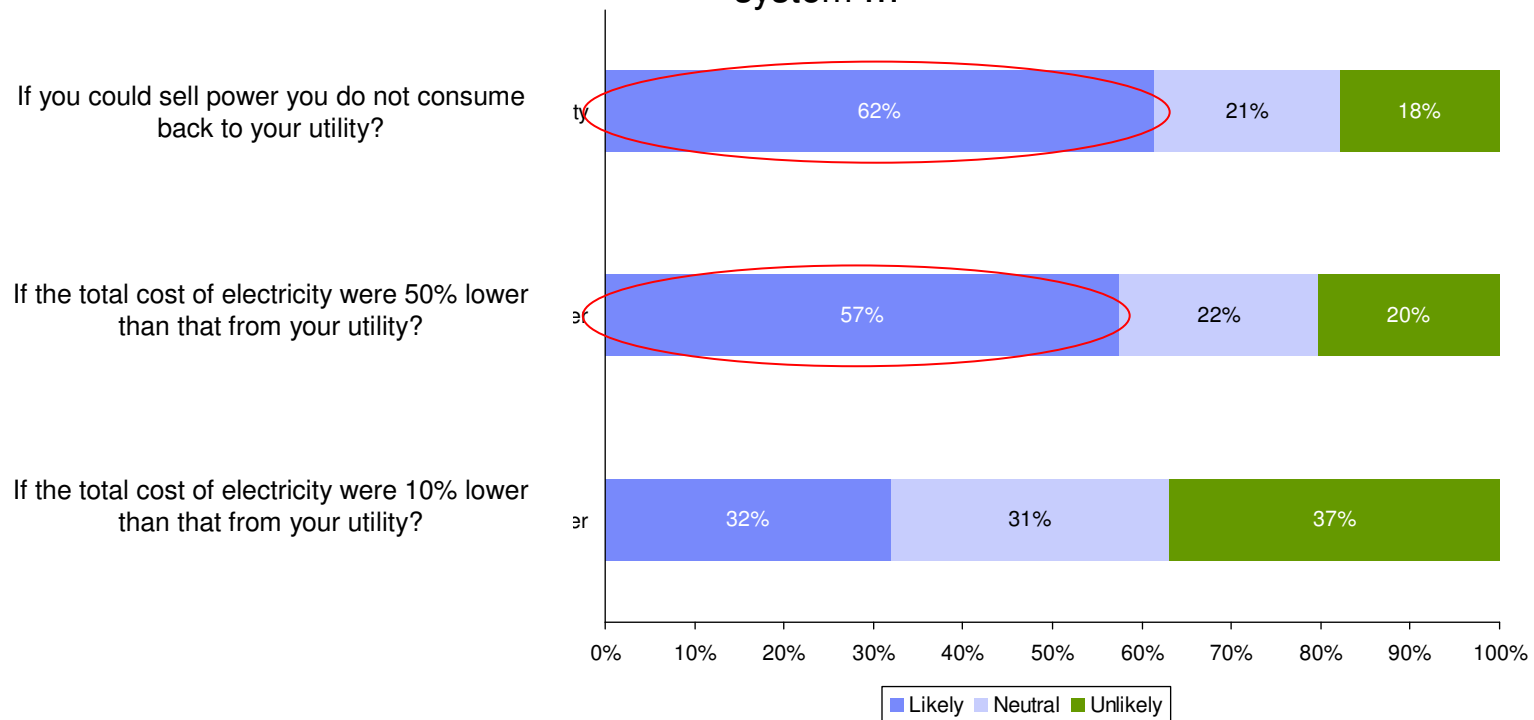
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Prospects for self-generation

Cost is a potentially big driver to small, off-grid generating systems for consumers

How likely would you be to install, maintain, and operate your own electric power generation system ...



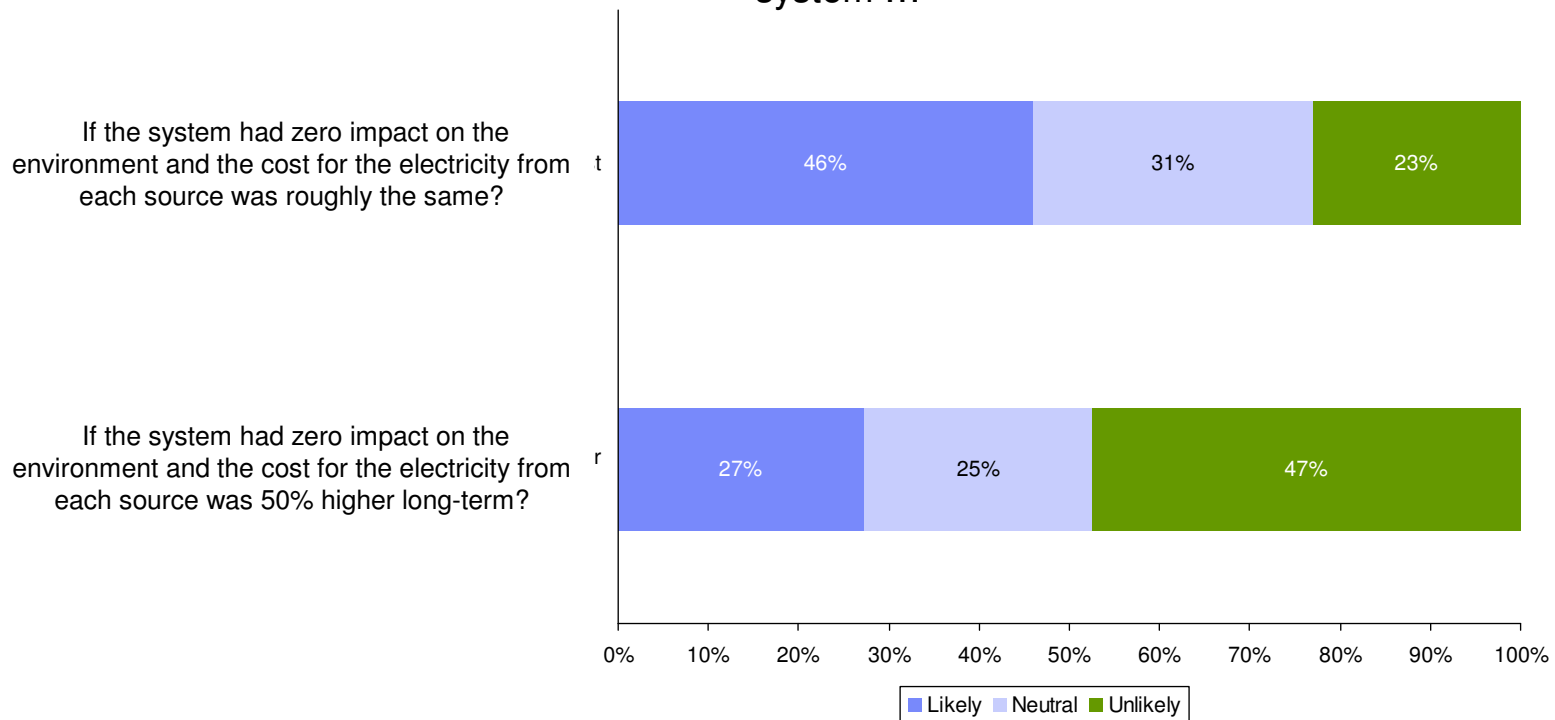
The slightly better reaction to the ability to sell power back versus getting very low cost power may be part of the indication that consumers want to be on a more equal footing with their providers

Source: 2007 IBM Institute for Business Value Residential/Small Commercial Consumer Survey.

Prospects for self-generation

Some consumer interest exists in small generation for environmental reasons – but primarily if there is no cost premium

How likely would you be to install, maintain, and operate your own electric power generation system ...

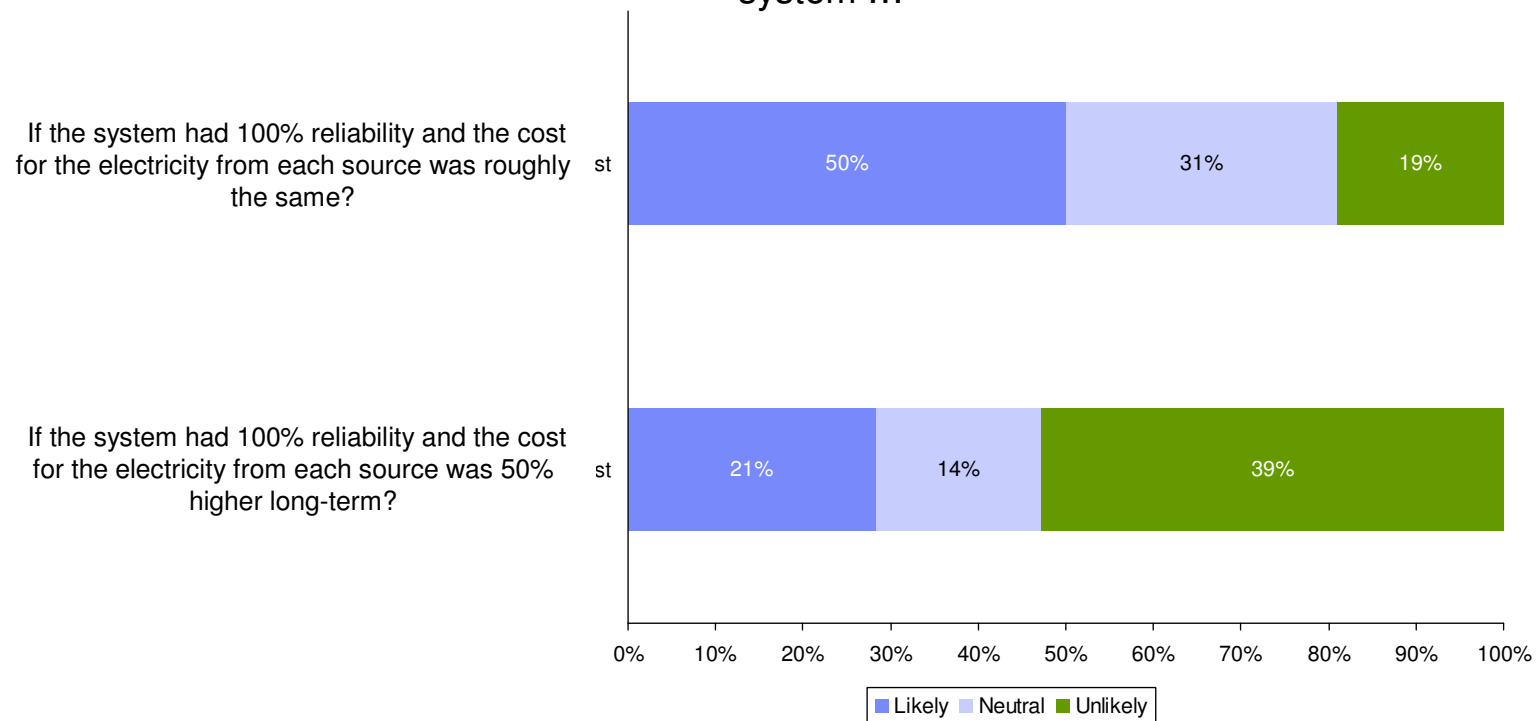


Source: 2007 IBM Institute for Business Value Residential/Small Commercial Consumer Survey.

Prospects for self-generation

Reliability issues may also be a factor in deployment of small power systems by non-industrial electricity users – but again, at low cost

How likely would you be to install, maintain, and operate your own electric power generation system ...



However, there appears to be a solid core of respondents – approximately 1/4- for whom 100% reliability is an important factor

Source: 2007 IBM Institute for Business Value Residential/Small Commercial Consumer Survey.

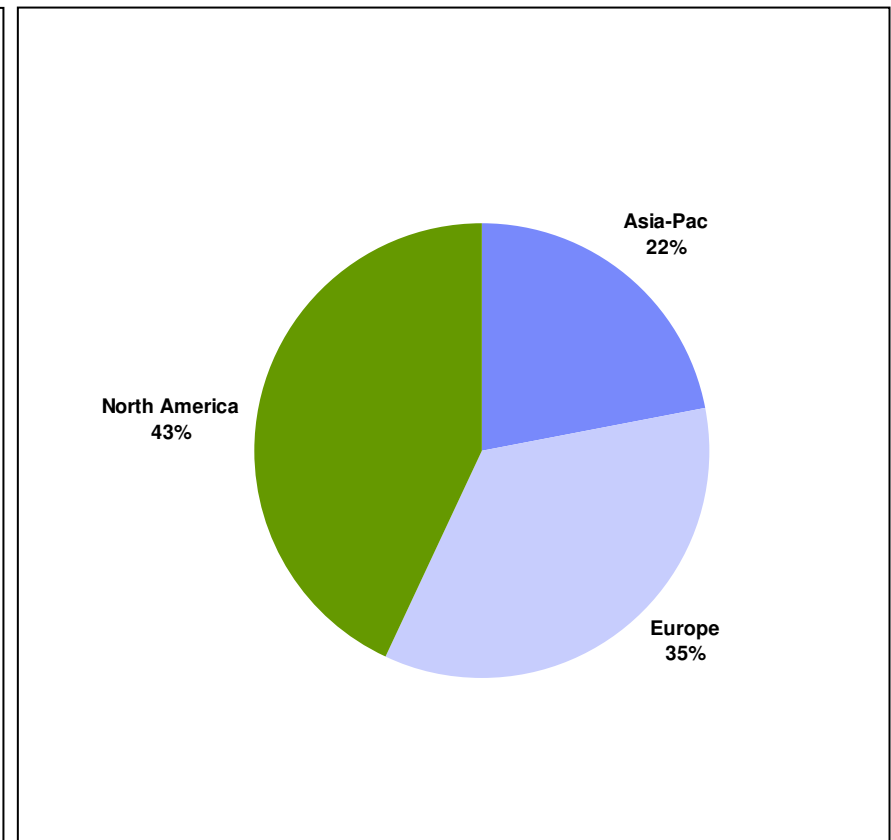
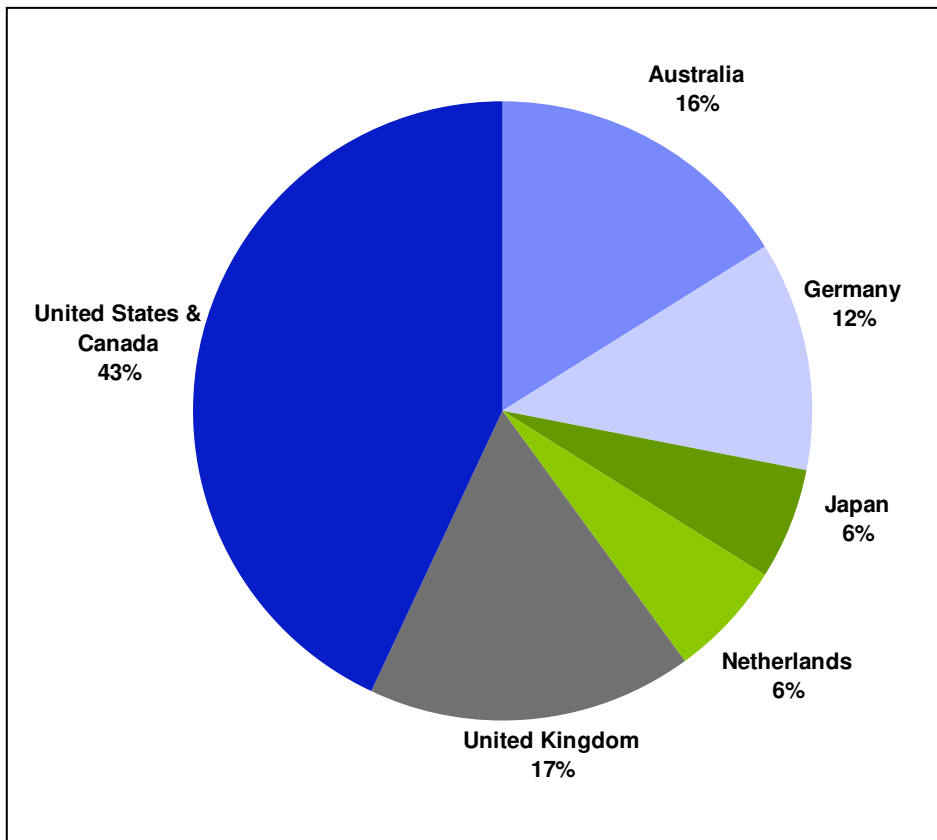
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Survey demographics

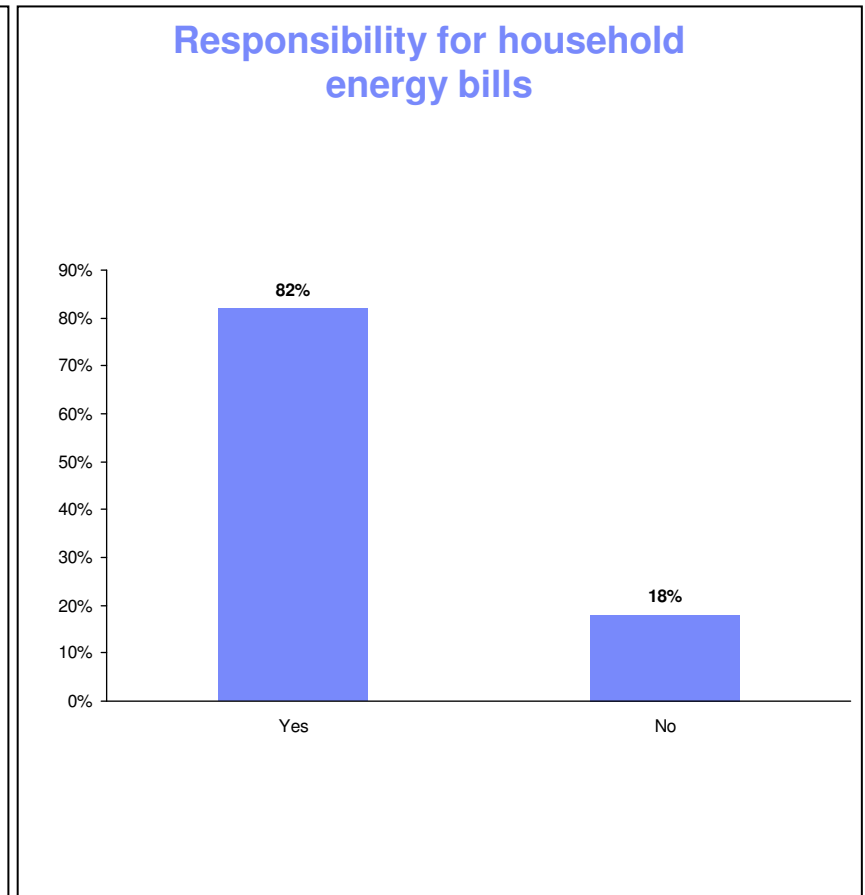
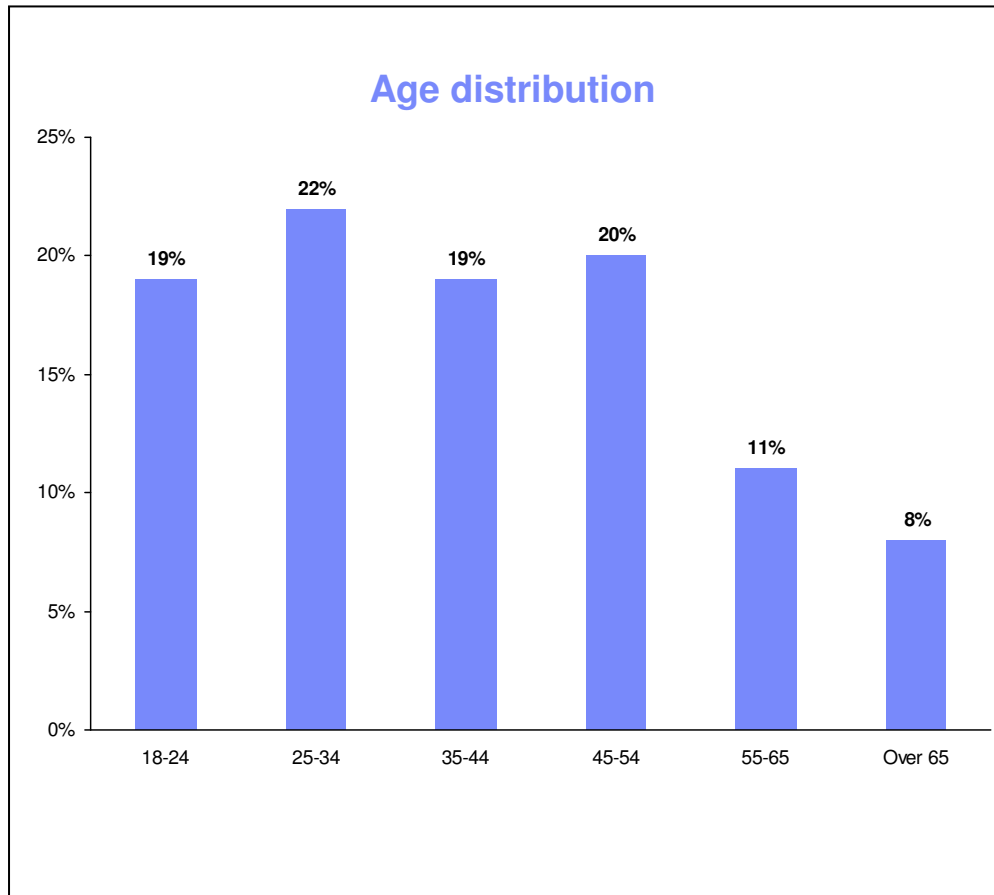
Six countries were represented in the 2300+ responses drawn from North America, Europe, and the Asia-Pacific region

Respondent country of origin



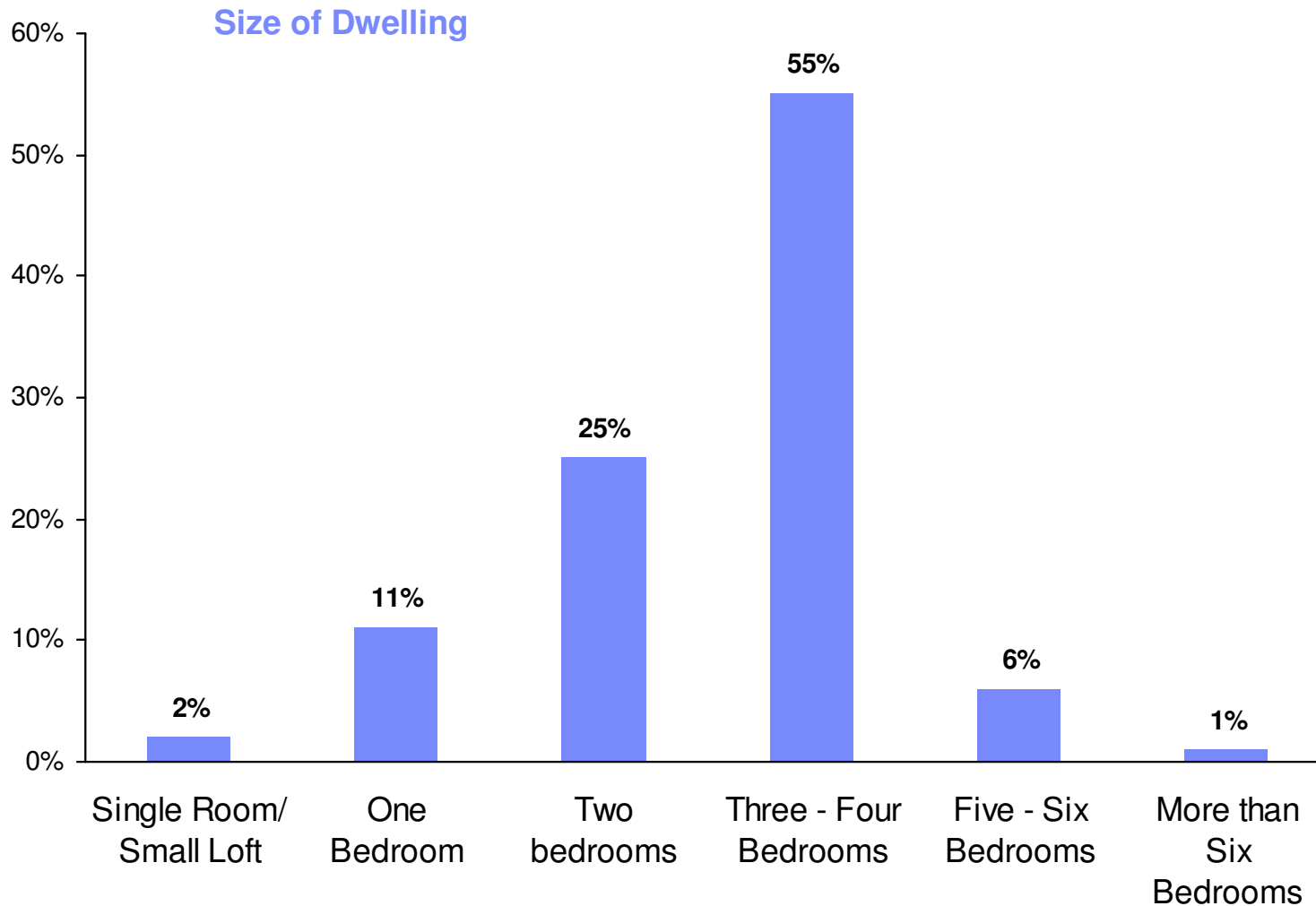
Survey demographics

Responses were distributed well across all age groups, and 82% of respondents had responsibility for paying energy bills



Survey demographics

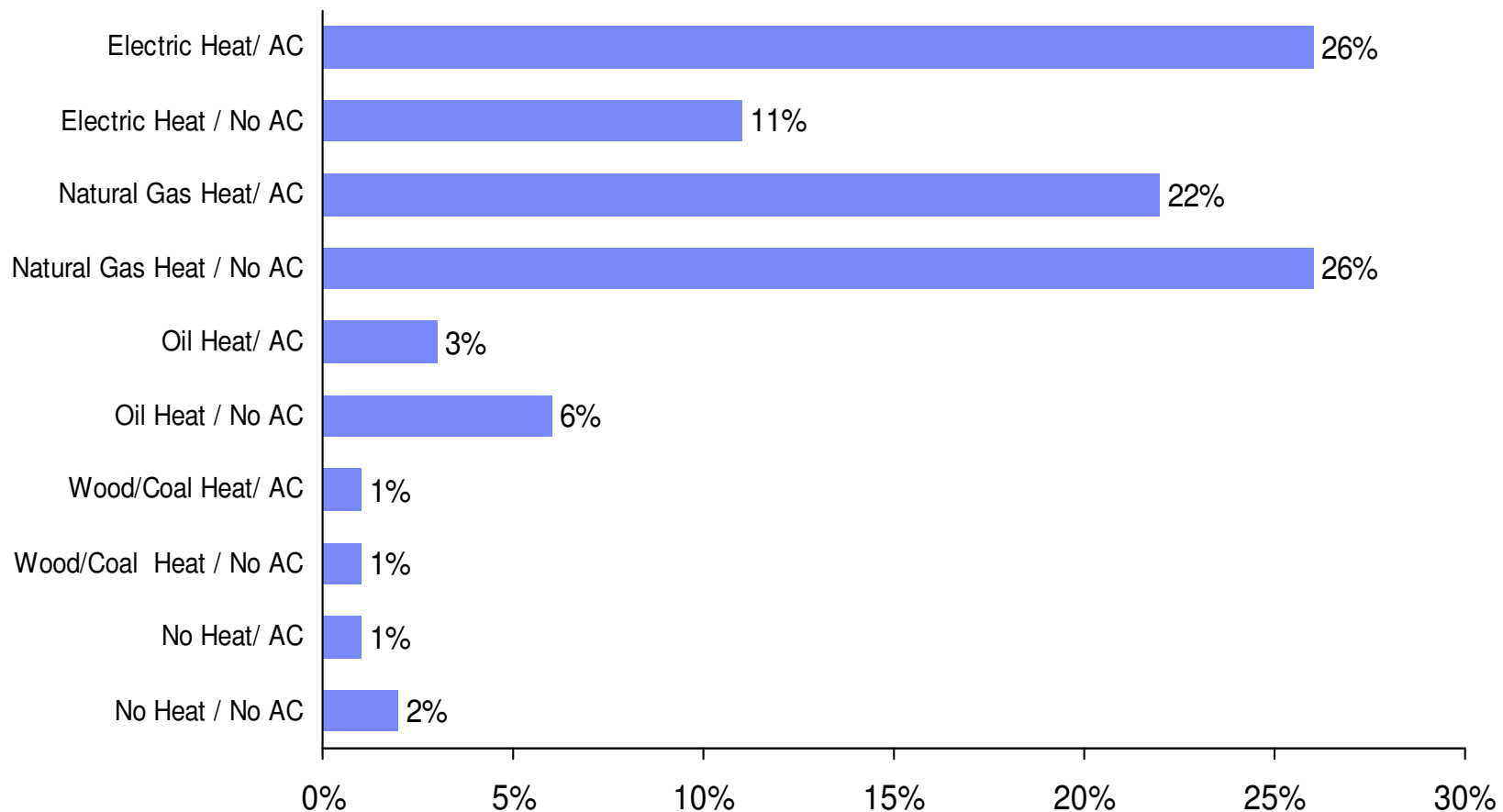
The vast majority of respondents live in 3-4 bedroom dwellings or smaller



Survey demographics

85% of respondents use electric or natural gas heating systems; a majority have air conditioning as well

Type of Heating / Cooling System in Use



Survey demographics

Over 80% incur an average monthly energy bill of no more than US\$250, and approx 40% pay less than US\$150 per month

Monthly Energy Bill

